Southern Nuclear Operating Company, Inc. Joseph M. Farley Nuclear Plant Docket 50-348 and 50-364

Transition to 10 CFR 50.48(c) - NFPA 805 Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition



Transition Report

September, 2012



Fire Area ID: Compliance Basis:	1-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-1-041-SEP-005
VFDR	N1B31L0001C:ON:OFF, PRESSURIZER HEATER GROUP 1C DISTRIBUTION PANEL - N1B31L0001C - Pressurizer Heater Group 1C Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage to heater and of N1R41L0001G can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-041-SEP-006
VFDR	N1B31L0001D:ON:OFF, PRESSURIZER HEATER GROUP 1D DISTRIBUTION PANEL - N1B31L0001D - Pressurizer Heater Group 1D Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage to heater and of N1R41L0001G can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-041-SEP-007
VFDR _	N1B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 1E DISTRIBUTION PANEL - N1B31L0001E - Pressurizer Heater Group 1E Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage to heater and of N1R41L0001H can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-041-SEP-008
Fire Safety Analysis Data	a Manager (4.1) Farley Run: 08/18/2012 22:07 Page: 890 of 24

Fire Area ID: Compliance Basis:	1-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	N1C55NI0031B:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31B - N1C55NI0031B - Source Range Count Rate Indicator NI- 31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital A Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-041-SEP-009		
VFDR	N1C55NI0032B:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32B - N1C55NI0031B - Source Range Count Rate Indicator NI- 31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-041-SEP-010		
VFDR	Q1B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 1A DISTRIBUTION PANEL - Q1B31L0001A - Pressurizer Heater Group 1A Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage to heater and of N1R41L0001G can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-bas approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
	U1-1-041-SEP-011		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:07 Page: 891 of 2430





Fire Area ID: Compliance Basis:	1-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q1B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 1B DISTRIBUTION PANEL - Q1B31L0001B - Pressurizer Heater Group 1B Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced damage of N1R41L0001G can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-041-SEP-012		
VFDR	Q1B41P0001A:ON:OFF, RCP 1A - Q1B41P0001A - RCP 1A. The pump is normally running required off. Fire induced cable damage can prevent ability to trip pump, and a challenge to Reactor Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-041-SEP-013		
VFDR	Q1B41P0001B:ON:OFF, RCP 1B - Q1B41P0001B - RCP 1B. The pump is normally running required off. Fire induced cable damage can prevent ability to trip pump, and a challenge to Reactor Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-041-SEP-014		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:07 Page: 892 of 2430

Fire Area ID: Compliance Basis:	1-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1B41P0001C:ON:OFF, RCP 1C - Q1B41P0001B - RCP 1B. The pump is normally running required off. Fire induced cable damage can prevent ability to trip pump, and a challenge to Reactor Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-041-SEP-015
VFDR	Q1E11P0001A:OFF:ON/OFF, 1A RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage due to cascading power supply to instruments cabinets generate a SIAS signal to spuriously start pump after battery depletion or after battery fails due to environmental concerns, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-041-SEP-016
VFDR	Q1E11P0001B:OFF:ON/OFF, 1B RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage due to cascading power supply to instruments cabinets generate a SIAS signal to spuriously start pump after battery depletion or after battery fails due to environmental concerns, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-041-SEP-020

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:07 Page: 893 of 2430





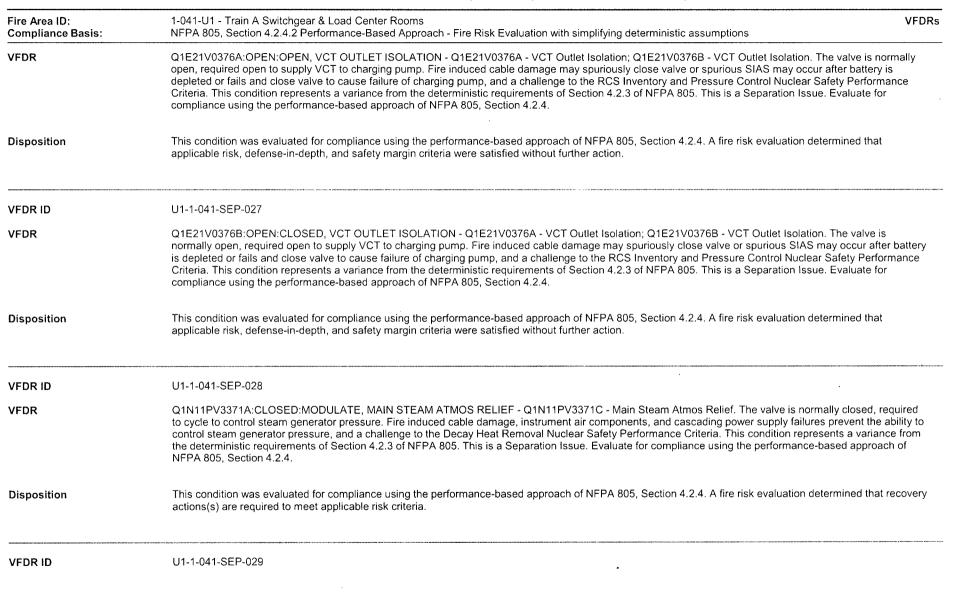
Fire Area ID: Compliance Basis:	1-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q1E21P0002A:STANDBY:ON/OFF, 1A CHARGING/HHSI PUMP - Q1E21P0002A - 1A Charging/HHSI Pump; Q1R43E0001A - Sequencer Bus 1F; Q1R41L0001B - 125Vdc Distribution Panel 1B. The pump is normally in Standby, required off; sequencer is normally available, required available and power supply normally energized, required energized, all required to turn off pump to prevent overcharging. Fire induced damage cable of sequencer and cascading loss of power to Q1R41L0001B prevent the ability to turn pump off, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-041-SEP-021		
VFDR	Q1E21P0002B:STANDBY:ON/OFF-TRAIN A, 1B CHARGING/HHSI PUMP - Q1E21P0002B - 1B Charging/HHSI Pump; Q1R43E0001A - Sequencer Bus 1F; Q1R41L0001B - 125Vdc Distribution Panel 1B. The pump is normally in Standby, required off; sequencer is normally available, required available and power supply normally energized, required energized, all required to turn off pump to prevent overcharging. Fire induced damage cable of sequencer and cascading loss of power to Q1R41L0001B prevent the ability to turn pump off, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-041-SEP-022		
VFDR	Q1E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - Q1E21V0016A - HHSI to RCS Cold Leg Isolation. The valve is normally closed required closed to prevent charging pump run out. Fire induced damage due to cascading power supply to instruments cabinets (SIAS) after battery depletio after battery fails due to environmental concerns may cause failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 80 This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-041-SEP-023		

,

Fire Area ID: Compliance Basis:	1-041-U1 - Train A Switchgear & Load Center NFPA 805, Section 4.2.4.2 Performance-Base	Rooms d Approach - Fire Risk Evaluation with simplifyir	g deterministic assumptions	VFDRs
VFDR	closed, required closed to prevent charging pu depletion or after battery fails due to environme and Pressure Control Nuclear Safety Performa	mp run out. Fire induced damage due to cascac ental concerns may cause failure of charging pu	V0016B - HHSI to RCS Cold Leg Isolation. The ling power supply to instruments cabinets (SIAS mp, and a challenge to the Reactivity Control ar ce from the deterministic requirements of Sectio ch of NFPA 805, Section 4.2.4.	6) after battery and RCS Inventory
Disposition		sing the performance-based approach of NFPA argin criteria were satisfied without further actio	805, Section 4.2.4. A fire risk evaluation determ n.	ined that
VFDR ID	U1-1-041-SEP-024			
VFDR	open to maintain RCS inventory. Fire induced battery depletion or after battery fails due to er and Pressure Control Nuclear Safety Performa	cable damage and cascading power supply to in vironmental concerns preventing ability to provi-	ng Pumps to Regen HX. The valve is normally on istruments cabinets (SIAS) may spuriously oper de charging, and a challenge to the Reactivity a se from the deterministic requirements of Section ch of NFPA 805, Section 4.2.4.	ate valve after nd RCS Inventory
Disposition		sing the performance-based approach of NFPA argin criteria were satisfied without further actio	805, Section 4.2.4. A fire risk evaluation determ n.	ined that
VFDR ID	U1-1-041-SEP-025			
VFDR	modulated, required modulated to provide mak battery depletion or after battery fails due to en Control Nuclear Safety Performance Criteria. T	eup. Fire induced damage of cascading powers vironmental concerns along with availability of it	347 - Charging Flow Control Valve. The valve is supply to instruments cabinets may prevent valv nstrument air, and a challenge to the RCS Inver terministic requirements of Section 4.2.3 of NFF 05, Section 4.2.4.	ve positioning after ntory and Pressure
Disposition		sing the performance-based approach of NFPA argin criteria were satisfied without further actio	805, Section 4.2.4. A fire risk evaluation determ n.	ined that
VFDR ID	U1-1-041-SEP-026			
,				
Fire Safety Analysis Data Ma	anager (4.1)	Farley	Run: 08/18/2012 22:07	Page: 895 of 2430







Fire Area ID: Compliance Basis:	1-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q1N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q1N11PV3371B - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced cable damage, instrument air components, and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that re actions(s) are required to meet applicable risk criteria.			
VFDR ID	U1-1-041-SEP-030			
VFDR	Q1N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - Q1N12V0001A - TDAFP Steam Supply Isolation Valve HV3235A. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and spurious instrument signals on loss of battery may prevent the ability to turn pump off, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U1-1-041-SEP-031			
VFDR	Q1N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - Q1N12V0001B - TDAFP Steam Supply Isolation Valve HV3235B. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and spurious instrument signals on loss of battery may prevent the ability to turn pump off, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U1-1-041-SEP-032			

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:07 Page: 897 of 2430







Fire Area ID: Compliance Basis:	1-041-U1 - Train A Switchgear & Load C NFPA 805, Section 4.2.4.2 Performance	enter Rooms -Based Approach - Fire Risk Evaluation with simplifyir	ng deterministic assumptions	VFDRs
VFDR	Steam Generator 1A. The pump is norm, and overfill. Fire induced damage to instr may prevent the ability to turn pump off c	DAFW SUPPLY TO STEAM GENERATOR 1A - Q1N ally off, required off; valve is normally open required c rument air components, cascading loss of power to TI or close valve, and a challenge to the Decay Heat Ren istic requirements of Section 4.2.3 of NFPA 805. This 105, Section 4.2.4.	losed to prevent uncontrolled TDAFW supply to s DAFW UPS and spurious instrument signals on lo noval Nuclear Safety Performance Criteria. This o	steam generator oss of battery condition
Disposition .		nce using the performance-based approach of NFPA fety margin criteria were satisfied without further action		ned that
VFDR ID	U1-1-041-SEP-033			
VFDR	Steam Generator 1B. The pump is norm and overfill. Fire induced damage to instr may prevent the ability to turn pump off o	DAFW SUPPLY TO STEAM GENERATOR 1B - Q1N ally off, required off; valve is normally open required c rument air components, cascading loss of power to TI or close valve, and a challenge to the Decay Heat Rer istic requirements of Section 4.2.3 of NFPA 805. This 805, Section 4.2.4.	losed to prevent uncontrolled TDAFW supply to s DAFW UPS and spurious instrument signals on lo noval Nuclear Safety Performance Criteria. This (steam generator oss of battery condition
Disposition		ance using the performance-based approach of NFPA afety margin criteria were satisfied without further action		ned that
VFDR ID	U1-1-041-SEP-034			
VFDR	Steam Generator 1C. The pump is norm and overfill. Fire induced damage to inst may prevent the ability to turn pump off o	HROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1C - Q1N23P0002 - TDAFW Pump; Q1N23HV3228C - TDAFW Supply to pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator lamage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the ach of NFPA 805, Section 4.2.4.		steam generator oss of battery condition
Disposition		ance using the performance-based approach of NFPA afety margin criteria were satisfied without further action		ned that
VFDR ID	U1-1-041-SEP-035			
Fire Safety Analysis Data	Manager (4.1)	Farley	Run: 08/18/2012 22:07	Page: 898 of 2430

Fire Area ID: Compliance Basis:	1-041-U1 - Train A Switchgear & Loac NFPA 805, Section 4.2.4.2 Performan	l Center Rooms ice-Based Approach - Fire Risk Evaluation with simplifying	g deterministic assumptions	VFDRs
VFDR ·	Generator 1A. The pump is normally o overfill. Fire induced damage to instrue prevent the ability to turn pump off or o	E DRIVEN AUX FEEDWATER PUMP - Q1N23P0002 - T off, required off; valve is normally open required closed to ment air components, cascading loss of power to TDAFW close valve, and a challenge to the Decay Heat Removal ements of Section 4.2.3 of NFPA 805. This is a Separatio	prevent uncontrolled TDAFW supply to steam generator V UPS and spurious instrument signals on loss of battery Nuclear Safety Performance Criteria. This condition repr	and may esents a
Disposition		bliance using the performance-based approach of NFPA a safety margin criteria were satisfied without further action		
VFDR ID	U1-1-041-SEP-036			
VFDR	Generator 1B. The pump is normally o overfill. Fire induced damage to instru prevent the ability to turn pump off or o	E DRIVEN AUX FEEDWATER PUMP - Q1N23P0002 - T off, required off; valve is normally open required closed to ment air components, cascading loss of power to TDAFW close valve, and a challenge to the Decay Heat Removal ements of Section 4.2.3 of NFPA 805. This is a Separatio	prevent uncontrolled TDAFW supply to steam generator V UPS and spurious instrument signals on loss of battery Nuclear Safety Performance Criteria. This condition repr	and may esents a
Disposition		bliance using the performance-based approach of NFPA a safety margin criteria were satisfied without further action		
VFDR ID	U1-1-041-SEP-037			
VFDR	Generator 1C. The pump is normally on overfill. Fire induced damage to instru prevent the ability to turn pump off or or prevent the ability to turn pump off or or the ability to turn pump off or or the ability to turn pump off or the second	E DRIVEN AUX FEEDWATER PUMP - Q1N23P0002 - T off, required off; valve is normally open required closed to ment air components, cascading loss of power to TDAFW close valve, and a challenge to the Decay Heat Removal ements of Section 4.2.3 of NFPA 805. This is a Separatio	prevent uncontrolled TDAFW supply to steam generator V UPS and spurious instrument signals on loss of battery Nuclear Safety Performance Criteria. This condition repr	⁻ and may esents a
Disposition		bliance using the performance-based approach of NFPA a safety margin criteria were satisfied without further action		
VFDR ID	U1-1-041-SEP-038			
		Farley	·	

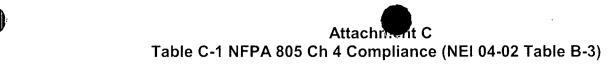


Fire Area ID: Compliance Basis:	1-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1R21L0001A:ENERGIZED:ENERGIZED, 120V VITAL AC INSTRUMENTATION PANEL 1A - N1C55NI0031B - Source Range Count Rate Indicator NI-31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-041-SEP-039
VFDR	Q1R21L0001B:ENERGIZED:ENERGIZED, 120V VITAL AC INSTRUMENTATION PANEL 1B - N1C55NI0031B - Source Range Count Rate Indicator NI-31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-041-SEP-040
VFDR	Q1R41L0001B:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 1B - Q1E21P0002A - 1A Charging/HHSI Pump; Q1R43E0001A - Sequencer Bus 1F; Q1R41L0001B - 125Vdc Distribution Panel 1B. The pump is normally in Standby, required off; sequencer is normally available, required available and power supply normally energized, required energized, all required to turn off pump to prevent overcharging. Fire induced damage cable of sequencer and cascading loss of power to Q1R41L0001B prevent the ability to turn pump off, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-041-SEP-041
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:07 Page: 900 of 24:

VFDR Q1R43E0001A.AVAILABLE-XVAILABLE-SEQ/SHED, SEQUENCER BUS 1F - Q1E21P0002A - 1A Charging/HHSI Pump; Q1R43E0001A - Q1R41L0001B 125Vdc Distribution Panel 1B. The pump is normally in Standby, required off; sequencer is normally available, required as supply normally energized, all required to turn off pump to prevent overcharging. Fire induced damage cable of sequenc loss of power to Q1R41L0001B prevent the ability to turn pump off, and a challenge to the RCS Inventory and Pressure Control Nuclear Safe Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. If compliance using the performance-based approach of NFPA 805, Section 4.2.4. Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation deter applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	VFDI
Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation deter applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	ilable and power er and cascading ety Performance
	mined that

Run: 08/18/2012 22:07 Page: 901 of 2430





Fire Area ID:	1-041-U2 - Train A Switchgear & Load Center Rooms	Fire Area Definition
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	

Fire Zone ID Description

0335-U2	335 Load Center Room, Train A
0343-U2	343 Load Center Room, Train A

0346-U2 346 Switchgear and M-G Set Room

	041-U2 - Train A Switchgear & Load Center Rooms PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalu	Performance Goa ation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Sub Conditions	Subcritical conditions are maintained by isolating the VCT dilution and by charging borated water from the RWST usi pump or swing charging pump aligned to Train B power.	
3.1 RCS Inventory Control - RCS Ma	RCS inventory is controlled using Train B charging pump of pump via Train B power aligned to the RWST.	or swing charging
3.2 RCS Inventory Control - Isolate I Paths	Leakage Normal letdown is isolated using orifice isolation valves. E isolated using one or more excess letdown or containment PZR PORV leakage paths are isolated using Train A POR PORV. The RCS to RHR high/low pressure interface is iso Train A/Train B RHR inboard isolation valve and Train A/T outboard isolation valve.	isolation valves. V and Train B lated using the
3.3 RCS Inventory Control - RCP Se	al Integrity Maintain RCP Seal Integrity - RCP seal integrity is maintain RCPs, maintaining normal seal injection using Train B cha charging pump via Train B power, and preventing failure o barriers. RCP seal injection paths are secured by isolating discharge seal injection lines. CCW to RCP thermal barrie containment isolation valves.	rging pump or swing f the RCP thermal the supply and
4.1 RCS Pressure Control - Pressure	e Transient Undesired depressurization due to inadvertent spray is pre normal and auxiliary spray valves remain closed and the L RCPs are shut off. Undesired pressure increase is preven based approach deenergizing all pressurizer heater group	oop 1 and Loop 2 ed by performance-
4.2 RCS Pressure Control - Positive Control	Pressure Positive control of RCS pressure is accomplished with per approach Train A PORV, Train B PORV or aux spray for p and Pressurizer Heater Group B for pressure increase.	

.



.

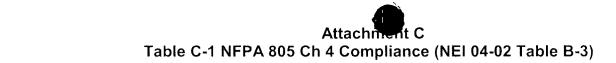


	Train A Switchgear & Load Center Rooms Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train B MDAFW supplying Steam Generator 2C. Main feed is isolated to prevent uncontro cooldown.		
6 Process Monitoring	 Shutdown Margin - Performance-based approach shutdown margin is monitored. RCS Pressure - RCS pressure is monitored by PZR narror range Ch 3, PZR non-safety channel, RCS wide range pressure for Loop Pressurizer Level - Pressurizer level is monitored by PZR level Ch 3. Temperature - Performance-based approach RCS Loop 3 temperature is monitored by loop hot and cold leg RTDs. SG Pressure - Steam Generator 2A/2B/ level is monitored. 	w o 1. 3. RCS erator	
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by EDG-1B. 2. 4.16 kV and 600 V power supplied by Train B distribution equipment. 3. 125 VDC power and 120 V power is supplied by Train B equipment.		
7.2 Vital Auxiliaries – Service Water	Train B service water is provided with two service water pumps in service recirculating to the pond or Train B service water is provided with one se water pump in service recirculating to the pond and non-essential turbine building loads isolated.	rvice	
7.3 Vital Auxiliaries – Component Cooli Water	ng Train B component cooling water is provided with non-essential loads is	plated.	
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room cooling at ess locations is provided with HVAC equipment corresponding to the service train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled. Initiation of carbon dioxide suppression systems will not damage components needed for safe shutdown; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Engineering Evaluation ID ENGDOC, SM-97-1561-001 Fire Barrier Penetration Revision 1 Inactive No Functionally Equivalent No	n Şeal Limiting Design Parameter Evaluation		
Functionally Equivalent No			
Adequate for the Hazard Yes			
Summary Purpose:			
Evaluate various penetration seals which, as a resul which were outside limits previously established via	t of plant walkdowns of as built configurations, exhibited one or mor qualification test reviews.	e Limiting Design Parameters (LDPs)	
Bases for Acceptability:			
The basis of the evaluation was to establish the acc	eptability of the field established configurations through either:		
Utilizing engineering judgment based on additional	reviews of test reports to justify the LDP in question;		
Refinement of field judgments through review of de			
Establishing additional technical bases which allow	ved reapplication of acceptance criteria for LDPs.		
	SM-C051326701-006 Identify Regulatory Fire Barriers 3		
Inactive No			
Functionally Equivalent No			
Adequate for the Hazard Yes			
Summary Purpose:			
such as SWIS, RWIS and the Diesel Generator Buil	tions for several fire area boundaries in Units 1 and 2 power block b ding. The approach was to examine any boundary for which there v ted reach rod penetrations and separation between pressure sensi	was not a documented/credited 3-hr	
Bases for Acceptability:			
The fire areas, fire zones and rooms on both sides	of the barrier were identified,		
The construction of the boundary and the potential	issue with the element in question was described,		
 The fire hazards and fire protection features on bo 	th sides of the barrier were described,		
 Elements with construction features equal to 3-hr l 	ooundaries were credited as such,		
Fire Safety Analysis Data Manager (4.1)	Farley Ru	ın: 08/18/2012 22:07 Page: 905 of 2430	



 Fire Area ID:
 1-041-U2 - Train A Switchgear & Load Center Rooms
 Engineering Evaluations

 Compliance Basis:
 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
 Engineering Evaluations

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID: 1-041-U2 - Train A Switchgear & Load Center Rooms **Required Fire Protection Systems and Features** NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Compliance Basis: Required FP System(s)/Feature(s) Description **Required By** Comments Detection 1A-37 EEEE/LA Required to support a fire area boundary evaluation. Detection 1A-37 Risk Criteria Required to meet risk criteria. Detection 1A-37 **DID** Criteria Required to meet DID criteria. Detection 1A-38 EEEE/LA Required to support a fire area boundary evaluation. Detection 1A-38 **Risk Criteria** Required to meet risk criteria. Detection 1A-38 **DID** Criteria Required to meet DID criteria. Detection 1A-39 EEEE/LA Required to support a fire area boundary evaluation. Detection 1A-39 **Risk Criteria** Required to meet risk criteria. Detection 1A-39 **DID** Criteria Required to meet DID criteria. Detection 1A-40 EEEE/LA Required to support a fire area boundary evaluation. Detection 1A-40 **Risk Criteria** Required to meet risk criteria. Detection 1A-40 **DID** Criteria Required to meet DID criteria. Detection 1A-41 EEEE/LA Required to support a fire area boundary evaluation. Detection 1A-41 **Risk Criteria** Required to meet risk criteria. Detection 1A-41 **DID** Criteria Required to meet DID criteria. Detection 1A-42 EEEE/LA Required to support a fire area boundary evaluation. Detection 1A-42 **Risk Criteria** Required to meet risk criteria. Detection 1A-42 **DID** Criteria Required to meet DID criteria. Gaseous Suppression 1A-37 EEEE/LA Required to support a fire area boundary evaluation. Gaseous Suppression 1A-37 **Risk Criteria** Required to meet risk criteria. Gaseous Suppression 1A-37 **DID** Criteria Required to meet DID criteria. Gaseous Suppression 1A-38 EEEE/LA Required to support a fire area boundary evaluation. Gaseous Suppression 1A-38 **Risk Criteria** Required to meet risk criteria. Gaseous Suppression 1A-38 **DID** Criteria Required to meet DID criteria. Gaseous Suppression EEEE/LA 1A-40 Required to support a fire area boundary evaluation. Gaseous Suppression 1A-40 **Risk Criteria** Required to meet risk criteria. 1A-40 Gaseous Suppression **DID** Criteria Required to meet DID criteria. Gaseous Suppression 1A-41 EEEE/LA Required to support a fire area boundary evaluation. Gaseous Suppression 1A-41 **Risk Criteria** Required to meet risk criteria. Gaseous Suppression 1A-41 **DID** Criteria Required to meet DID criteria. Gaseous Suppression 1A-42 EEEE/LA Required to support a fire area boundary evaluation. Gaseous Suppression 1A-42 **Risk Criteria** Required to meet risk criteria. 1A-42 Gaseous Suppression DID Criteria Required to meet DID criteria. Passive One Hour Rated Cable **Risk Criteria** Required to meet risk cirteria Passive One Hour Rated Cable Risk Criteria Required to meet risk criteria

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:07 Page: 907 of 2430





		11-U2 - Train A Switchgear & Load Center Rooms PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Required FP System(s)/Feature(s	s) Description	Required By	Comments
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to meet risk criteria.

Fire Area ID: Compliance Basis:	1-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Title	FRE for Fire Area 1-041-U2	
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with fire rated cables, specified recovery actions and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.	
Δ CDF		
ΔLERF		
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection and suppression systems were identified as required for DID.	
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.	
Comments		

÷

Fire Area ID: Compliance Basis:	1-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-1-041-BC-001	
VFDR	N2B21TR0413:AVAILABLE-TE413:AVAILABLE-TE413, RCS HOT LEG TEMPERATURE RECORDER TR-413 - This safe shutdown component requires DC power to perform its safe shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inve the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. Decay Heat Removal via SG 2 desired in this fire area. In order to remove Core Decay Heat, RCS Loop Temperature Indication must remain available for operators at the control room. loss of power to the RCS Loop 1 Hot and Cold Leg Temperature indicators TR0413 or TR0410 (Hot Leg and Cold Leg respectively) could render Loop 1 Temperature Indication unavailable. AC panels 2A and 2J (both can be supplied from Battery 2A) provide the necessary power for TR0413. AC panels 2E 2J supply power for the TE0410 loop (Both supplied from Battery 2A). This failure challenges the Decay Heat Removal Nuclear Safety Performance Crite This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliand using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-1-041-BC-002	
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer Heaters are required off. A loss of control power to DC Panel 2B could result in a failure to train Pressurizer Heater Group 2A. Failure to secure the Pressurizer Heater 2A could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-1-041-BC-003	
VFDR	Q2B31PT0455:AVAILABLE:AVAILABLE, PRESSURIZER PRESS PROT CHANNEL 1 PRESS TRANSMITTER - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT455 could initiate a spurious SIAS signal. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, and a failure to establish a charging injection path. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

.

Fire Area ID: Compliance Basis:	1-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-1-041-BC-004
VFDR	Q2C22LT0474:AVAILABLE:AVAILABLE, STEAM GENERATOR 2A LEVEL TRANSMITTER - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of power to LT474 could initiate a SG 2A Hi-Hi or Lo-Lo water level signal. This signal could potentially start the MDAFW Pumps at the inopportune time before the Auxiliary Feed water Lineup is established. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-1-041-BC-005
VFDR	Q2C22LT0484:AVAILABLE:AVAILABLE, STEAM GENERATOR 2B LEVEL TRANSMITTER - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of power to LT484 could initiate a SG 2B Hi-Hi or Lo-Lo water level signal. This signal could potentially start the MDAFW Pumps at the inopportune time before the Auxiliary Feed water Lineup is established. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-1-041-BC-006









Fire Area ID: Compliance Basis:	1-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2C22LT0494:AVAILABLE:AVAILABLE, STEAM GENERATOR 2C LEVEL TRANSMITTER - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of power to LT494 could initiate a SG 2C Hi-Hi or Lo-Lo water level signal. This signal could potentially start the MDAFW Pumps at the inopportune time before the Auxiliary Feed water Lineup is established. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-1-041-BC-008
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Charging pump 2A suffers a loss of control power from panel 2B that would prevent remote tripping of the pump and/or potential spurious start of the pump due to fire induced circuit failure. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-1-041-BC-009
VFDR	Q2E21V0243:CLOSED:CLOSED, RCS ALTERNATE CHARGING LINE - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. Isolating the alternate charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Alternate Charging line supply from CVCS) fails open on a loss of power to DC panel 2A, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	1-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-1-041-BC-010	
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This safe shutdown component requires AC or DC power to perform its sa shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. AC power is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A loss of power could result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-1-041-BC-011	
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of power to the Steam Generator Level Transmitters (LT474, LT475-SG2A) (LT484, LT485-SG2B) or (LT494, LT495-SG2C) could initiate a spurious TDAFW Pump start signal. This signal could open the steam admission valves to the TDAFW Pump and cause the pump to spuriously steam the Generators. This failure could result in an overcooling condition and challenge the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-1-041-BC-012	
VFDR	N2C55NI0032A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32A - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. Source Range Instrumentation is required to monitor Reactivity Conditions. A loss of channel 1 and channel 2 Source Range Detectors could occur, due to a loss of power from AC panels 2A and 2B. This would prevent operator ability to monitor source range count levels. Failure to monitor subcritical conditions challenges the Reactivity Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

.



Fire Area ID: Compliance Basis:	1-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	, This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-1-041-BC-013
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2A supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. The Atmospheric Relief Valves are required to modulate in order to relieve steam to the atmosphere and facilitate the removal of decay heat. Decay Heat Removal via SG2A is desired in this fire area. A loss of power/and or instrument air will cause valve ARV PV3371A to fail closed. Instrument air fails due to a loss of power to load centers 2A and 2G to the compressors. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-1-041-HVAC-001
VFDR	Q2R42B0001A:ENERGIZED:ENERGIZED-BC2A, 125V DC BUS 2A - This component, 125V DC Bus 2A, requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component challenges HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.
VFDR ID	U2-1-041-HVAC-002
VFDR	O2R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 2B - This component, Battery 2A, requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component challenges HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	1-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-1-041-IA-001
VFDR	Q2E21V0243:CLOSED:CLOSED, RCS ALTERNATE CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the alternate charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Alternate Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-1-041-IA-002
VFDR	Q2E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the normal charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Normal Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the aux spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-1-041-IA-003



.

Fire Area ID: Compliance Basis:	1-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2E21V0245:CLOSED:CLOSED, RCS PRESSURIZER AUX SPRAY - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. This valve is required to cycle in order to supply CVCS inventory to the pressurizer to de-pressurize via aux-spray, and the valve fails closed on a loss of instrument air. An inability to cycle this valve due to a loss of instrument air would prevent de-pressurization of the RCS via aux-spray. Failure to ensure cycling capability of this valve challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-1-041-IA-004		
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 permits normal chargin flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A lo of instrument air could result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-1-041-SEP-001		
VFDR	N2B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL - Pressurizer Group E is not credited for use, and spurious operation the heater may result in an RCS over pressurization condition. A loss of power to DC Panel 1H due to circuit failure and the panel being physically located in t area, could prevent remote tripping of the load. This failure challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-1-041-SEP-002		
Fire Safety Analysis Data I	Manager (4.1) Farley Run: 08/18/2012 22:07 Page: 916 of 243		

Fire Area ID: Compliance Basis:	1-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs		
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Fire induced control circuit damage to sequencer 2F could spuriously start charging pump 2A. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			

.

Run: 08/18/2012 22:07 Page: 917 of 2430



Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
0319-U1	319 Corridor - Train B	
0339-U1	339 Corridor - Train A	
0345-U1	345 Hallway - Train A	

	x Building Hallways & Corridor ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by performance-based approach isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump aligned to Train B power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train B charging pump or swing charging pump via Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance -based approach tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves.		
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray valves remain closed and the performance-based approach Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with performance-based approach Train B PORV for pressure reduction and Pressurizer Heater Group B for pressure increase.		



Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation v	vith simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train B M supplying Steam Generator 1C. Main feed is performance-based isolated to prevent uncontrolled cooldown.	
6 Process Monitoring	 Shutdown Margin - Performance-based approach shutdown m monitored. RCS Pressure - RCS pressure is monitored by PZ range Ch 3, PZR non-safety channel, RCS wide range pressure f Pressurizer Level - Performance-based approach pressurizer lev monitored. RCS Temperature - Performance-based approach temperature is monitored by loop hot and cold leg RTDs. SG F Steam Generator 1C pressure is monitored. SG Level - Steam 1A/1B/1C level is monitored. 	R narrow for Loop 1. 3. el is RCS Loop 3 Pressure -
7.1 Vital Auxiliaries – Electrical	 Performance-based approach electrical power is supplied by d generator EDG-1B. 4.16 kV and 600 V power is supplied by T distribution equipment. 125 VDC power and 120 VAC power is Train B equipment. 	rain B
7.2 Vital Auxiliaries – Service Wa	Ater Performance-based approach Train B service water is provided w service water pumps in service recirculating to the pond or Train water is provided with one service water pump in service recircula pond and non-essential turbine building loads isolated.	B service
7.3 Vital Auxiliaries – Componer Water	t Cooling Train B component cooling water is provided with non-essential le	oads isolated.
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by performance-based approace HVAC. Room cooling at essential locations is provided with HVAC corresponding to the service water train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Engineering Evaluation ID	SM-C051326701-006 Identify Regulatory Fire Barriers	
Revision	3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a drated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,	
	• The construction of the boundary and the potential issue with the element in question was described,	
	- The fire becards and fire protection features on both sides of the barrier ware described	

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

.



Farley

	-042-U1 - Aux Building Hallways & Corridor IFPA 805, Section 4.2.4.2 Performance-Bas		Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions
Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	1A-59	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	1A-59	DID Criteria	Required to meet DID criteria.
Detection	1A-59	Separation	Required to support the use of MI cable.
Detection	1A-59 [1]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	1A-59 [1]	DID Criteria	Required to meet DID criteria.
Water Suppression	1A-59	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	1A-59	Separation	Suppression is required to support the use of MI cable.
Water Suppression	1A-59 [345]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	1A-59 [345]	DID Criteria	Required to meet DID criteria.
Passive	One Hour Rated Cable	Risk Criteria	Required to meet risk criteria.
Passive	One Hour Rated Cable	Separation	Required to support the NSCA.
Passive	Restricted transient controls	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Modifications	·	Risk Criteria	Modification to provide fuse or other electrical isolation device at the DC shunt connection point and replace trip device in panel Q1R42B0001A, breaker LA13.
Modifications		DID Criteria	Modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available.

.

.

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Title	FRE for Fire Area 1-042-U1	
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the modification(s), enhanced transient restrictions and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.	
ΔCDF		
ΔLERF		
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available and the installed detection and suppression systems were identified as required for DID.	
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.	
Comments		





Fire Area ID: Compliance Basis:			
VFDR ID	U1-1-042-IA-001		
VFDR	Q1B31V0061:OPEN/CLOSED:OPEN/CLOSED, PRESSURIZER PORV - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1B31V0061 - Pressurizer PORV. The normally closed PORV valve required to cycle to control RCS pressure transient. Fire induced damage to instrument air components may result in spuriously closing of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-042-SEP-001		
VFDR	N1B21TR0410:AVAILABLE-TE420:AVAILABLE-TE420, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N1B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-042-SEP-002		
VFDR	N1B21TR0410:AVAILABLE-TE430:AVAILABLE-TE430, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N1B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.		

:

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U1-1-042-SEP-003	
VFDR	N1B21TR0413:AVAILABLE-TE423:AVAILABLE-TE423, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N1B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U1-1-042-SEP-004	
VFDR	N1B21TR0413:AVAILABLE-TE433:AVAILABLE-TE433, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N1B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.	
VFDR ID	U1-1-042-SEP-005	
VFDR	N1B31L0001C:ON:OFF, PRESSURIZER HEATER GROUP 1C DISTRIBUTION PANEL - N1B31L0001C - Pressurizer Heater Group 1C Distribution Panel. Th Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage to N1R41L0001G can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	



Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U1-1-042-SEP-006	
VFDR	N1B31L0001D:ON:OFF, PRESSURIZER HEATER GROUP 1D DISTRIBUTION PANEL - N1B31L0001D - Pressurizer Heater Group 1D Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage to N1R41L0001G can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-007	
VFDR	N1B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 1E DISTRIBUTION PANEL - N1B31L0001E - Pressurizer Heater Group 1E Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage to N1R41L0001H can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-008	
VFDR	N1B31LI0460:AVAILABLE:AVAILABLE, PRESSURIZER LEVEL INDICATOR LI-460 (PROTECTION CHANNEL II) - N1B31LI0460- Pressurizer Level Indicator LI-460. The indicator is normally available, required available at least one indicator from pressurizer level is required to provide process monitoring of RCS level Fire induced damage due to cascading power failures result in failure to monitor the RCS level, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-009	

.

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Cor NFPA 805, Section 4.2.4.2 Performance	ridor e-Based Approach - Fire Risk Evaluation with simplifying d	leterministic assumptions	VFDRs
VFDR	31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1B. The indicator is no failures prevent the ability to monitor the Criteria. This condition represents a vari	BLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31B - N1C55NI0031B - Source Range Count Rate Indicator NI- 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance presents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for formance-based approach of NFPA 805, Section 4.2.4.		
Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk e applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire P			ned that	
VFDR ID	U1-1-042-SEP-010			
VFDR	31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1B. The indicator is no failures prevent the ability to monitor the Criteria. This condition represents a vari	B:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32B - N1C55NI0031B - Source Range Count Rate Indicator NI- 110001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC nel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply it the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance ondition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for ing the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation dete applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			ned that
VFDR ID	U1-1-042-SEP-011			
VFDR	N1N11PI0485:AVAILABLE:AVAILABLE, STEAM PRESSURE LOOP 2 INDICATOR PROTECTION CHANNEL III - N1N11PI0485 - Steam Pressure Loop 2 Indicator Protection Channel III. The indicator is normally available, required available at least one indicator steam generator pressure is required to provide process monitoring of steam generator pressure. Fire induced cable damage results in failure to monitor the steam generator pressure, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		ed to provide challenge to the rministic	
Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluated applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		5, Section 4.2.4. A fire risk evaluation determi	ned that	
VFDR ID	U1-1-042-SEP-012			
			Run: 08/18/2012 22:07	



Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	N1N11PI0486:AVAILABLE:AVAILABLE, STEAM PRESSURE LOOP 2 INDICATOR PROTECTION CHANNEL IV - N1N11PI0486 - Steam Pressure Loop 2 Indicator Protection Channel IV. The indicator is normally available, required available at least one indicator steam generator pressure is required to provide process monitoring of steam generator pressure. Fire induced cable damage results in failure to monitor the steam generator pressure, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Sectior 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-013	
VFDR	N1N11PI0495:AVAILABLE:AVAILABLE, STEAM PRESSURE LOOP 3 INDICATOR PROTECTION CHANNEL III - N1N11PI0495 - Steam Pressure Loop 3. The indicator is normally available, required available at least one indicator steam generator pressure is required to provide process monitoring of steam generator pressure. Fire induced cable damage results in failure to monitor the steam generator pressure, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-014	
VFDR	N1N11PI0496:AVAILABLE:AVAILABLE, STEAM PRESSURE LOOP 3 INDICATOR PROTECTION CHANNEL IV - N1N11PI0496 - Steam Pressure Loop 3. The indicator is normally available, required available at least one indicator steam generator pressure is required to provide process monitoring of steam generator pressure. Fire induced cable damage results in failure to monitor the steam generator pressure, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFP/ 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-015	

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	N1N21P0001A:ON/STANDBY:OFF, CONDENSATE PUMP 1A - N1N21P0001A - Condensate Pump 1A; N1N21P0001B - Condensate Pump 1B; N1N21P0001C - Condensate Pump 1C; Q1N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q1N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q1N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-016	
VFDR	N1N21P0001B:ON/STANDBY:OFF, CONDENSATE PUMP 1B - N1N21P0001A - Condensate Pump 1A; N1N21P0001B - Condensate Pump 1B; N1N21P0001C - Condensate Pump 1C; Q1N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q1N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q1N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-017	
VFDR	N1N21P0001C:ON/STANDBY:OFF, CONDENSATE PUMP 1C - N1N21P0001A - Condensate Pump 1A; N1N21P0001B - Condensate Pump 1B; N1N21P0001C - Condensate Pump 1C; Q1N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q1N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q1N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on requir off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-018	
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:07 Page: 929 of 243	







Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q1B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 1A DISTRIBUTION PANEL - Q1B31L0001B - Pressurizer Heater Group 1A Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage and to N1R41L0001G can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-019	
VFDR	Q1B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 1B DISTRIBUTION PANEL - Q1B31L0001D - Pressurizer Heater Group 1B Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage to N1R41L0001G can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-020	
VFDR	Q1B41P0001A:ON:OFF, RCP 1A - Q1B41P0001A - RCP 1A. The pump is normally on, required off to prevent RCS inventory losses and meet thermo hydraul concerns. Fire induced damage due to cascading power failures may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-021	

concerns. Fire induced cable damage and cascading power failures may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control I Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action. VFDR U1-1-042-SEP-022 VFDR Q1B41P0001C:ON:OFF, RCP 1C - Q1B41P0001C - RCP 1C. The pump is normally on, required off to prevent RCS inventory and Pressure Control for Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria vere satisfied without further action. VFDR Q1B41P0001C:ON:OFF, RCP 1C - Q1B41P0001C - RCP 1C. The pump is normally on, required off to prevent RCS Inventory and Pressure Convolcent Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action. VFDR U1-1-042-SEP-023 VFDR U1-1-042-SEP-023 VFDR Q1E11P	Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action. VFDR ID U1-1-042-SEP-022 VFDR O1841P0001C:ON:OFF, RCP 1C - 01841P0001C - RCP 1C. The pump is normally on, required off to prevent RCS inventory losses and meet thermo hydraulic concerns. Fire induced damage due to cascading power failures may prevent pump trip, and a challenge to the RCS Inventory and Pressure Co Nuclear Safety Performance Orienta. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action. VFDR ID U1-1-042-SEP-023 VFDR ID U1-1-042-SEP-023 VFDR O1E11P0001A-OFF-ON/OFF, 1A RHR/LHSI PUMP - 01E11P0001A - 1A RHR/LPSI Pump; 01E11P0001B - 1B RHR/LPSI Pump. The pump is normally required of to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS Signal to spuriously start pu and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Ortenia. This condition represenvariance from the deterministic requirements of Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action. VFDR U1-1-042-SEP-023 VFDR O1E11P0001A-OFF-ON/OFF, 1A RHR/LHSI PUMP - 01E11P0001A - 1A RHR/LPSI Pump; 01E11P0001B - 1B RHR/LPSI Pump. The pump is normally and a challenge to the RCS	/FDR	Q1B41P0001B:ON:OFF, RCP 1B - Q1B41P0001B - RCP 1B. The pump is normally on, required off to prevent RCS inventory losses and meet thermo hydraulic concerns. Fire induced cable damage and cascading power failures may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
VFDR Q1B41P0001C:ON:OFF, RCP 1C - Q1B41P0001C - RCP 1C. The pump is normally on, required off to prevent RCS inventory losses and meet thermo hydraulic concerns. Fire induced damage due to cascading power failures may prevent pump trip, and a challenge to the RCS Inventory and Pressure Cc Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action. VFDR ID U1-1-042-SEP-023 VFDR Q1E11P0001A:OFF:ON/OFF. 1A RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pu and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represent of Section 4.2.4. Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	Disposition		
hydraulic concerns. Fire induced damage due to cascading power failuries may prevent pump trip, and a challenge to the RCS Inventory and Pressure Convicter Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action. VFDR ID U1-1-042-SEP-023 VFDR Q1E11P0001A-OFF-ON/OFF, 1A RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pu and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represent variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	/FDR ID	U1-1-042-SEP-022	
applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action. VFDR ID U1-1-042-SEP-023 VFDR Q1E11P0001A:OFF:ON/OFF, 1A RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pu and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represen variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	/FDR	hydraulic concerns. Fire induced damage due to cascading power failures may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a	
VFDR Q1E11P0001A:OFF:ON/OFF, 1A RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pu and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represen variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	Disposition		
required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pu and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represen variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	/FDR ID	U1-1-042-SEP-023	
applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	/FDR	Q1E11P0001A:OFF:ON/OFF, 1A RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
VFDR ID U1-1-042-SEP-024	Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	/FDR ID	U1-1-042-SEP-024	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:07 Page: 931 of 2430



.

Attachment C Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q1E11P0001B:OFF:ON/OFF, 1B RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-030	
VFDR	Q1E21P0002B:STANDBY:ON/OFF-TRAIN A, 1B CHARGING/HHSI PUMP - Q1E21P0002B - 1B Charging/HHSI Pump; Q1R43E0001A - Sequencer Bus 1F; Q1R41L0001B - 125Vdc Distribution Panel 1B. The pump is normally in Standby, required off; sequencer is normally available, required available and power supply normally energized, required energized, all required to turn off pump to prevent overcharging. Fire induced damage cable of sequencer and cascading loss of power to Q1R41L0001B prevent the ability to turn pump off, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-031	
VFDR	Q1E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - Q1E21V0016A - HHSI to RCS Cold Leg Isolation. The valve is normally closed, required closed to prevent charging pump run out. Fire induced damage may generate a SIAS to cause a failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-032	

١

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q1E21V0016B:CLOSED:CLOSED-TRAINB, HHSI TO RCS COLD LEG ISOLATION - Q1E21V0016B - HHSI to RCS Cold Leg Isolation. The valve is normally closed, required closed to prevent charging pump run out. Fire induced damage may generate a SIAS to cause a failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the determinist requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-033	
VFDR	Q1E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q1E21V0257 - Charging Pumps to Regen HX. The valve is normally open, required to open to maintain RCS inventory. Fire induced cable damage may generate a SIAS to preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-034	
VFDR	Q1E21V0258:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q1E21V0258 - Charging Pumps to Regen HX. The valve is normally open, required to open to maintain RCS inventory. Fire induced cable damage may generate a SIAS to preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
~		

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q1E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Q1E21V0347 - Charging Flow Control Valve. The valve is normally modulated, required modulated to provide makeup. Fire induced cable damage, cascading power supply to instruments cabinets, and instrument air failures may prevent valve positioning, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-036	
VFDR	Q1E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q1E21V0376A - VCT Outlet Isolation; Q1E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced cable damage or spurious SIAS may spuriously close valve to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-037	
VFDR	Q1E21V0376B:OPEN:CLOSED, VCT OUTLET ISOLATION - Q1E21V0376B - VCT Outlet Isolation. The valve is normally open, required closed to prevent a boron dilution event or damage to the charging pumps. Fire induced cable damage can cause spurious valve operation allow RMWT to dilute the RCS boron concentration or gas binding of the charging pumps, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-038	

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q1E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q1E21V0376A - VCT Outlet Isolation; Q1E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced cable damage or spurious SIAS may spuriously close valve to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-039	
VFDR	Q1N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Q1N11PV3371A - Main Steam Atmos Relief. The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage may spuriously open valve and prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-040	
VFDR	Q1N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Q1N11PV3371B - Main Steam Atmos Relief. The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage may spuriously open valve and prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	- U1-1-042-SEP-041	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:07 Page: 935 of 2430





Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor VFDP NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q1N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q1N11PV3371B - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced cable damage, instrument air components, and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-042	
VFDR	Q1N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Q1N11PV3371C - Main Steam Atmos Relief. The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage may spuriously open valve and prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-043	
VFDR	Q1N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Q1N11PV3371C - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced cable damage, instrument air components, and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-044	

í

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1N11V0002A:OPEN:CLOSED, 1A SG MSIV - Q1N11V0002A - 1A SG MSIV. The valve is normally open, required closed to control steam generator pressure. Fire induced cable damage may fail open valve and prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-045
VFDR	Q1N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - Q1N12V0001A - TDAFP Steam Supply Isolation Valve HV3235A. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage generates a spurious instrument signals on loss of battery may prevent the ability to turn pump off, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-046
VFDR	Q1N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - Q1N12V0001B - TDAFP Steam Supply Isolation Valve HV3235B. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage generates a spurious instrument signals on loss of battery may prevent the ability to turn pump off, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-047

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor VFDRs NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1N21V0001A:OPEN:CLOSED, A STEAM GENERATOR MAIN FEED STOP CHECK VALVE MOV3232A - N1N21P0001A - Condensate Pump 1A; N1N21P0001B - Condensate Pump 1B; N1N21P0001C - Condensate Pump 1C; Q1N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q1N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q1N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-048
VFDR	Q1N21V0001B:OPEN:CLOSED, B STEAM GENERATOR MAIN FEED STOP CKECK VALVE MOV3232B - N1N21P0001A - Condensate Pump 1A; N1N21P0001B - Condensate Pump 1B; N1N21P0001C - Condensate Pump 1C; Q1N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q1N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q1N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-049
VFDR	Q1N21V0001C:OPEN:CLOSED, C STEAM GENERATOR MAIN FEED STOP CHECK VALVE MOV3232C - N1N21P0001A - Condensate Pump 1A; N1N21P0001B - Condensate Pump 1B; N1N21P0001C - Condensate Pump 1C; Q1N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q1N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q1N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-1-042-SEP-050
VFDR	Q1N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1A - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. The valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced damage to instrument air components, cascading power failures and spurious automatic actuation signals may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-051
VFDR	Q1N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1B - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. The valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced damage to instrument air components, cascading power failures and spurious automatic actuation signals may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-052
VFDR	Q1N23HV3228C:OPEN:OPEN, TDAFW SUPPLY TO STEAM GENERATOR 1C - Q1N23P0002 - TDAFW Pump; Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage, instrument air components failures, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-053
Fire Safety Analysis Data I	Manager (4.1) Farley . Run: 08/18/2012 22:08 Page: 939 of 243

.



Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q1N23P0002 - TDAFW Pump; Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage, instrument air components failures, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-054
VFDR	Q1N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q1N23P0002 - TDAFW Pump; Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage, instrument air components failures, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-055
VFDR	Q1P15SV3103:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID SOLENOID VALVE - Q1P15SV3103 - Pressurizer Liquid Solenoid Valve and Q1P15SV3332 - Pressurizer Liquid Sample Isolation Valve. These valves are normally closed, required closed to isolate Pressurizer sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-042-SEP-056
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:08 Page: 940 of 24:

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1P15SV3104:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM SOLENOID VALVE - Q1P15SV3104 - Pressurizer Steam Solenoid Valve and Q1P15SV3331 - Pressurizer Steam Sample Isolation Valve. These valves are normally closed, required closed to isolate Pressurizer sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-042-SEP-057
VFDR	Q1P15SV3331:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM SAMPLE ISOLATION VALVE - Q1P15SV3104 - Pressurizer Steam Solenoid Valve and Q1P15SV3331 - Pressurizer Steam Sample Isolation Valve. These valves are normally closed, required closed to isolate Pressurizer sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-042-SEP-058
VFDR	Q1P15SV3332:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID SAMPLE ISOLATION VALVE - Q1P15SV3103 - Pressurizer Liquid Solenoid Valve and Q1P15SV3332 - Pressurizer Liquid Sample Isolation Valve. These valves are normally closed, required closed to isolate Pressurizer sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-042-SEP-059



Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1P15SV3333:CLOSED:OPEN/CLOSED, REACTOR COOLANT HOT LEG SAMPLE ISOLATION SOLENOID - Q1P15SV3765 - Reactor Coolant Hot Leg Solenoid Valve and Q1P15SV3333 - Reactor Coolant Hot Leg Sample Isolation Solenoid. These valves are normally closed, required closed to isolate hot leg sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-042-SEP-060
VFDR	Q1P15SV3765:CLOSED:OPEN/CLOSED, REACTOR COOLANT HOT LEG SOLENOID VALVE - Q1P15SV3765 - Reactor Coolant Hot Leg Solenoid Valve and Q1P15SV3333 - Reactor Coolant Hot Leg Sample Isolation Solenoid. These valves are normally closed, required closed to isolate hot leg sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-042-SEP-061
VFDR	Q1P16V0522:CLOSED:CLOSED, SW TO D/G 1B - Q1P16V0522 - SW to D/G 1B. The valve is normally closed, required closed to prevent crosstie of service water system. Fire induced cable damage can cause spurious valve operation and prevent adequate service water support to the diesel generator, and a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-062

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1P16V0523:OPEN:OPEN, SW TO D/G 1B - Q1P16V0523 - SW to D/G 1B. The valve is normally open, required open to align service water system to diesel generator. Fire induced cable damage can cause spurious valve operation and prevent adequate service water support to the diesel generator, and a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-063
VFDR	Q1P16V0531:OPEN:OPEN, SW FROM D/G 1B - Q1P16V0531 - SW from D/G 1B. The valve is normally open, required open to align service water system to diesel generator. Fire induced cable damage can cause spurious valve operation and prevent adequate service water support to the diesel generator, and a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-064
VFDR	Q1R11B0005:ENERGIZED:ENERGIZED, STATION SERVICE TRANSFORMER 1E - Q1R16B0007 - 600V Load Center 1E. The switchgear is normally energized required energized. Fire induced cable damage can prevent power to DGB HVAC and components required for diesel generator to place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-065





Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1R15A0007:ENERGIZED:ENERGIZED-EDG1B, 4160V SWITCHGEAR BUS 1G - Q1R15A0007 - 4160V Switchgear Bus 1G. The switchgear is normally energized required energized. Fire induced cable damage to load power cable concurrent with fault on breaker control circuit can prevent EDG to provide power to bus may place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-066
VFDR	Q1R15A0506:ENERGIZED:ENERGIZED, 4160V SWITCHGEAR BUS 1L - Q1R15A0506 - 4160V Switchgear Bus 1L. The bus is normally energized required energized. Fire induced cable damage can prevent power from bus and may place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-067
VFDR	Q1R21L0001A:ENERGIZED:ENERGIZED, 120V VITAL AC INSTRUMENTATION PANEL 1A - N1C55NI0031B - Source Range Count Rate Indicator NI-31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-042-SEP-068

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 944 of 2430

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1R21L0001B:ENERGIZED:ENERGIZED, 120V VITAL AC INSTRUMENTATION PANEL 1B - N1C55NI0031B - Source Range Count Rate Indicator NI-31B and Q1R21L0001A - 120V Vital AC Instrument Panel.1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-042-SEP-069
VFDR	Q1R41L0001B:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 1B - Q1E21P0002B - 1B Charging/HHSI Pump; Q1R43E0001A - Sequencer Bus 1F; Q1R41L0001B - 125Vdc Distribution Panel 1B. The pump is normally in Standby, required off; sequencer is normally available, required available and power supply normally energized, required energized, all required to turn off pump to prevent overcharging. Fire induced damage cable of sequencer and cascading loss of power to Q1R41L0001B prevent the ability to turn pump off, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-070
VFDR	Q1R41L0001D:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 1D - Q1R41L0001D - 125V dc Distribution Panel. The panel is normally energized, required energized to support electrical equipment operation. Fire induced cable damage may disable electrical support, and a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-071

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 945 of 2430



Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
VFDR	Q1R42E0001B:ENERGIZED:ENERGIZED, BATTERY CHARGER 1B - Q1R42E0001B - Battery Charger 1B. The charger is normally energized, required energized to support electrical distribution system. Fire induced cable may disable electrical support, and a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-072	
VFDR	Q1R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 1B - Q1R42B0002B - 125V Battery 1B. The battery is normally available required available. Fire induced cable damage can disable the dc power required for diesel generator and may place plant in an unrecoverable condition, and a challenge to all Nucl. Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issu Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	lear sue.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-073	
VFDR	Q1R43A0502:STANDBY:ENERGIZING U1, 1B DIESEL GENERATOR - Q1R43A0502- 1B Diesel Generator. The diesel is normally in standby required running. Fire induced cable damage can prevent power from diesel generator and may place plant in an unrecoverable condition, and a challenge to all Nucl. Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Iss Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-042-SEP-074	

Fire Safety Analysis Data Manager (4.1)

-

Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1R43E0001A:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 1F - Q1E21P0002B - 1B Charging/HHSI Pump; Q1R43E0001A - Sequencer Bus 1F; Q1R41L0001B - 125Vdc Distribution Panel 1B. The pump is normally in Standby, required off; sequencer is normally available, required available and power supply normally energized, required energized, all required to turn off pump to prevent overcharging. Fire induced damage cable of sequencer and cascading loss of power to Q1R41L0001B prevent the ability to turn pump off, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-075
VFDR	Q1R43E0001B:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 1G - Q1R43E0001B - Sequencer Bus 1G. The sequencer is normally available required available. Fire induced cable damage can disable the sequencer required for diesel generator and may place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-042-SEP-076
VFDR	Q1V47MOV3643:OPEN:OPEN, BATTERY ROOM EXHAUST FAN DAMPER - Q1V47MOV3643 - Battery Room Exhaust Fan. The fan is normally on, required on to support CCW control power to Q1R41L0001E. Fire induced cable may disable electrical support, and a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-042-SEP-077

Run: 08/18/2012 22:08 Page: 947 of 2430





Fire Area ID: Compliance Basis:	1-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Rs
VFDR	QSV49K0001B:STANDBY:ON, CONTROL ROOM PACKAGE A/C BLOWER UNIT B - QSV49K0001B - Control Room A/C Blower Unit B. The blower is normally in standby, required on to provide control room HVAC. Fire induced cable damage can disable blower, and a challenge to vital auxiliaries support for primary control station habitability for all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	

•

Fire Area ID: Compliance Basis:	1-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
0319-U2	319 Corridor - Train B	
0339-U2	339 Corridor - Train A	
0345-U2	345 Hallway - Train A	









	1-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump aligned to Train B power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train B charging pump or swing charging pump via Train B power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transien	t Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	

Fire Area ID: Compliance Basis:	1-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation	n with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train E or TDAFW pump supplying Steam Generator 2A/2B/2C. Main t to prevent uncontrolled cooldown.	
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by F range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide ran Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is moni level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loo temperature is monitored by loop hot and cold leg RTDs. 5. So Steam Generator 2A/2B/2C pressure is monitored. 6. SG Leve Generator 2A/2B/2C level is monitored.	PZR narrow ge pressure for tored by PZR p 2/Loop 3 S Pressure -
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 2A/SU generator EDG-2B. 2. 4.16 kV and 600 V power is supplied by distribution equipment. 3. 125 VDC power and 120 VAC powe Train A/Train B equipment.	Train A/Train B
7.2 Vital Auxiliaries – Service Wa	Train B service water is provided with two service water pumps recirculating to the pond or Train B service water is provided w water pump in service recirculating to the pond and non-essen building loads isolated.	ith one service
7.3 Vital Auxiliaries – Componen Water	t Cooling Train B component cooling water is provided with non-essentia	I loads isolated.
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A HVAC. Room coo locations is provided with HVAC equipment corresponding to the train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.







Attachment C

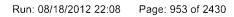
Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3) Fire Area ID: 1-042-U2 - Aux Building Hallways & Corridor **Engineering Evaluations** NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Compliance Basis: **Engineering Evaluation ID** SM-C051326701-006 Identify Regulatory Fire Barriers Revision 3 Inactive No Functionally Equivalent No Adequate for the Hazard Yes Purpose: Summary This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines. Bases for Acceptability: • The fire areas, fire zones and rooms on both sides of the barrier were identified, • The construction of the boundary and the potential issue with the element in question was described, • The fire hazards and fire protection features on both sides of the barrier were described,

• The me hazards and me protection reactives on both sides of the barren were described

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

	1-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Bas	lways & Corridor Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Required FP System(s)/Feature(s) Description	Required By	Comments	
Detection	1A-59	EEEE/LA	Required to support a fire area boundary evaluation.	
Detection	1A-59	DID Criteria	Required to meet DID criteria.	
Detection	1A-59 [1]	EEEE/LA	Required to support a fire area boundary evaluation.	
Detection	1A-59 [1]	DID Criteria	Required to meet DID criteria.	
Detection	1A-59 [1]	Separation	Required to support the use of MI cable.	
Water Suppression	1A-59	EEEE/LA	Required to support a fire area boundary evaluation.	
Water Suppression	1A-59	Separation	Suppression is required to support the use of MI cable.	
Water Suppression	1A-59 [345]	EEEE/LA	Required to support a fire area boundary evaluation.	
Water Suppression	1A-59 [345]	DID Criteria	Required to meet DID criteria.	
Passive One Hour Rated Cable Risk Criteria Required to meet risk criteria.		Required to meet risk criteria.		
Passive	One Hour Rated Cable	ed Cable Separation Required to support the NSCA.		
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.	
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to m risk criteria.	







,





Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	1-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 1-042-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with fire rated cable, specified recovery actions and the installed detection/suppression system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained."
Comments	

.

Fire Area ID: Compliance Basis:	1-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U2-1-042-HVAC-001		
VFDR	Q2R42B0001A:ENERGIZED:ENERGIZED-BC2A, 125V DC BUS 2A - This component, 125V DC Bus 2A (Train A Battery Charger Room Cooler), requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component challenges all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using th performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.		
VFDR ID	U2-1-042-HVAC-002		
VFDR	Q2R15A0006:ENERGIZED:ENERGIZED-SUT2A, 4160V SWITCHGEAR BUS 2F - This component, Switchgear 2F (600V Load Center D Cooler), requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component could challenge various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U2-1-042-HVAC-003		
VFDR	Q2R15A0007:ENERGIZED:ENERGIZED-SUT2A, 4160V SWITCHGEAR BUS 2G - This component, Switchgear 2G (600V Load Center E Room Cooler), requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component challenges various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
	U2-1-042-HVAC-004		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 955 of 2430





Fire Area ID: Compliance Basis:	1-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2R17B0001:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2A - This component, MCC 2A, requires HVAC support to remain functional. Failure provide HVAC support to this electrical component challenges various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFP/ 805, Section 4.2.4.	
isposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation of applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U2-1-042-HVAC-005	
VFDR	N2R11A0501:ENERGIZED:ENERGIZED, 2A START-UP TRANSFORMER - This component, 2A?Start-up Transformer, requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component could challenge the electrical support vital auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-1-042-SEP-001	
VFDR	Q1P16V0522:CLOSED:CLOSED, SW TO D/G 1B - In order to establish the Service Water Supply, the line associated with the Unit 2 DG Cross Tie must be isolated. Fire induced circuit failure could spuriously open valve Q1P16V0522 and lead to a diversion path for service water. This failure challenges all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-1-042-SEP-004	

Fire Safety Analysis Data Manager (4.1)

~

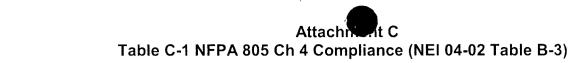
.

Fire Area ID: Compliance Basis:	1-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q1R43E0001A:AVAILABLE:AVAILABLE-SHED, SEQUENCER BUS 1F - Fire induced circuit failure to the sequencer circuit could impact power availability if offsite power is not available. Without proper sequencer operation, the Diesel Generator will not be able to satisfy various measures that permit shedding and loading of selective loads. Offsite power associated with unit 2 may not be available due to a loss of HVAC to Bus 2F, however this is contingent upon the survivability timeframe or a potential paralleling of offsite and diesel sources due to fire induced circuit failure. Failure to ensure the availability of AC power challenges various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-1-042-SEP-005	
VFDR	N2B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL - The Pressurizer Heaters are required off in order control RCS Pressure, and avoid overpressure transients. A loss of control power to DC Bus 1H would prevent remote tripping of Pressurizer Heater Group E. This failur challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Farley





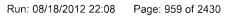


Fire Area ID: Compliance Basis:	1-053 - Aux Building Elevator Machine Room No. 2 NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID 0502	Description 502 Elevator Machine Room No. 2	

Run: 08/18/2012 22:08 Page: 958 of 2430

.

Fire Area ID: Compliance Basis:	1-053 - Aux Building Elevator Machine Room No. 2 asis: NFPA 805, Section 4.2.3 Deterministic Approach	
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Roc	m.
2.1 Reactivity Control - Reactor	Trip Reactor is manually tripped from the Control Roor	ı.
2.2 Reactivity Control - Maintain Conditions	n Subcritical Subcritical conditions are maintained by isolating f dilution and by charging borated water from the R ¹ pump, Train B charging pump or swing charging p power.	NST using Train A charging
3.1 RCS Inventory Control - RC	S Makeup RCS inventory is controlled using Train A charging pump or swing charging pump via Train A/Train B	
3.2 RCS Inventory Control - Isc Paths	late Leakage Normal letdown is isolated using orifice isolation v valve, or a letdown path containment isolation valv isolated using one or more excess letdown or cont PZR PORV leakage paths are isolated using Trair PORV. The RCS to RHR high/low pressure interfa Train A/Train B RHR inboard isolation valve and T outboard isolation valve.	re. Excess letdown is ainment isolation valves. A PORV and Train B ce is isolated using the
3.3 RCS Inventory Control - RC	P Seal Integrity Maintain RCP Seal Integrity - RCP seal integrity is RCPs, maintaining normal seal injection using Tracharging pump or swing charging pump via Train , preventing failure of the RCP thermal barriers. RC secured by isolating the supply and discharge sea RCP thermal barriers are isolated using containmed CCW to RCP thermal barrier isolation valve.	in A charging pump, Train B A/Train B power, and P seal injection paths are Linjection lines. CCW to
4.1 RCS Pressure Control - Pre	 Unit 1: Undesired depressurization due to inadve ensuring normal and auxiliary spray are not oper increase is prevented by deenergizing all pressu 	ating. Undesired pressure
	 Unit 2: Undesired depressurization due to inadve ensuring auxiliary spray valve remains closed a RCPs are shut off. Undesired pressure increase deenergizing all pressurizer heater groups. 	nd the Loop 1 and Loop 2
4.2 RCS Pressure Control - Por Control	sitive Pressure Positive control of RCS pressure is accomplished PORV or aux spray for pressure reduction and Prefor pressure increase.	





Fire Area ID: Compliance Basis:	1-053 - Aux Building Elevator Machine Room No. 2 NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump and TDAFW pump su Generator 1A/1B/1C. Main feed is isolated to prevent to 	pplying Steam	
	 Unit 2: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump, or TDAFW pump sup Generator 2A/2B/2C. Main feed is isolated to prevent to 	plying Steam	
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is mor range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pr PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety ch range pressure for Loop 1/Loop 3. 3. Pressurizer Lev monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tem 1/Loop 2/Loop 3 temperature is monitored by loop hot RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C monitored. 6. SG Level - Steam Generator 1A/1B/1C 	essure is monitored by annel, and RCS wide el - Pressurizer level is perature - RCS Loop and cold leg pressure is	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is mor range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pr PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety ch range pressure for Loop 1/Loop 3. 3. Pressurizer Lev monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Ten 1/Loop 2/Loop 3 temperature is monitored by loop hot RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C monitored. 6. SG Level - Steam Generator 2A/2B/2C 	essure is monitored by annel, RCS wide el - Pressurizer level is perature - RCS Loop and cold leg pressure is	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 6 supplied by Train A/Train B distribution equipment. 3. 120 VAC power is supplied by Train A/Train B equipm 	00 V power is 125 VDC power and	
	 Unit 2: 1. Electrical power is supplied by off-site power diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 6 supplied by Train A/Train B distribution equipment. 3. 120 VAC power is supplied by Train A/Train B equipment 	00 V power is 125 VDC power and	
7.2 Vital Auxiliaries Service Wate	Train A/Train B service water is provided with two service service recirculating to the pond or Train A/Train B serv with one service water pump in service recirculating to t essential turbine building loads isolated.	ce water is provided	
7.3 Vital Auxiliaries Component (Cooling Water Train A/Train B component cooling water is provided wi isolated.	h non-essential loads	

Fire Area ID: Compliance Basis:	1-053 - Aux Building Elevator Machine Room No. 2 NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goals	
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		,

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Safety Analysis Data Manager (4.1)







Fire Area ID: Compliance Basis:	1-053 - Aux Building Elevator Machine Room No. 2 Engineering Evaluation NFPA 805, Section 4.2.3 Deterministic Approach Engineering Evaluation
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	- The fire bazards and fire protection features on both sides of the barrier wars described

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

1-053 - Aux Building Elevator Machine Room No. 2 NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
N/A	
This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
· · · · · · · · · · · · · · · · · · ·	
	NFPA 805, Section 4.2.3 Deterministic Approach N/A

Run: 08/18/2012 22:08 Page: 963 of 2430

.



Fire Area ID: Compliance Basis:	1-054 - Aux Building Elevator Machine Room No. 1 and Elevator No. 1 Shaft Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	,

0503

503 Elevator Machine Room No. 1 and Elevator No. 1 Shaft

.

.

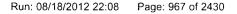
Compliance Basis: Unit 1: NFF	Building Elevator Machine Room No. 1 and Elevator No. 1 Shaft A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sin A 805, Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump aligned to Train A / Train B power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integri	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A/Train B charging pump (s) or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transie	Int Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	

Compliance Basis: Unit 1:	Aux Building Elevator Machine Room No. 1 and Elevator No. 1 Shaft NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sin NFPA 805, Section 4.2.3 Deterministic Approach	nplifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
4.2 RCS Pressure Control - Positive Pres Control	• Unit 1: Positive control of RCS pressure is accomplished with aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
	 Unit 2: Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase. 		
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using Train A/Train B MDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 		
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 		
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 		
7.1 Vital Auxiliaries – Electrical	• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
	• Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		

Fire Area ID: Compliance Basis:			Performance Goals	
Performance Goal		Method of Accomplishment	Comments	
7.2 Vital Auxiliaries – Service Water		Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Component Cooling Water		Train A/Train B component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVAC		Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

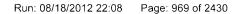




Fire Area ID: 1-054 - Aux Building Elevator Machine Room No. 1 and Elevator No. 1 Shaft **Engineering Evaluations Compliance Basis:** Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach **Engineering Evaluation ID** SM-C051326701-006 Identify Regulatory Fire Barriers 3 Revision No Inactive Functionally Equivalent No Adequate for the Hazard Yes Summarv Purpose: This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines. Bases for Acceptability: • The fire areas, fire zones and rooms on both sides of the barrier were identified, • The construction of the boundary and the potential issue with the element in guestion was described, • The fire hazards and fire protection features on both sides of the barrier were described, • Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

1-054 - Aux Building Elevator Machine Room No. 1 and Elevator No. 1 Shaft Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
FRE for Fire Area 1-054
A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.



Fire Area ID: Compliance Basis:	1-054 - Aux Building Elevator Machine Room No. 1 and Elevator No. 1 Shaft VFDR Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR ID	U1-1-054-IA-001		
VFDR	Q1E21V0243:CLOSED:CLOSED, RCS ALTERNATE CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1E21V0243 - This valve directs flow to the RCS via the alternate charging line. Instrument air is required to support the close function of the valve in order to provide a sufficient pressure gradient to de-pressurize the RCS via aux spray. A loss of instrument air would result in the valve failing full open thus challenging the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-054-IA-002		
VFDR	Q1E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1E21V0244- This valve directs flow to the RCS cold leg and constitutes the normal charging line. Instrument air is required to support the modulating capability of the valve in order to provide a sufficient pressure gradient to de-pressurize the RCS via aux spray. A loss of instrument air would result in the valve failing full open thus challenging the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-054-IA-003		
VFDR	Q1E21V0245:CLOSED:OPEN/CLOSED, RCS PRESSURIZER AUX SPRAY - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1E21V0245-This valve controls the charging flow to the pressurizer (known as aux spray) in order to facilitate RCS de-pressurization. Instrument air is required to cycle the valve open and close in order to accommodate RCS pressure requirements. A loss of instrument air will result in the valve failing closed, thus posing a challenge to the RCS Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		

Fire Area ID: Compliance Basis:	1-054 - Aux Building Elevator Machine Room No. 1 and Elevator No. 1 Shaft is: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID	U1-1-054-IA-004	
VFDR	Q1E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1E21V0347-This valve controls the normal charging flow inventory to the RCS. Instrument air is required to support the modulating capability of this valve in order to control charging inventory flow to the RCS in order to facilitate inventory makeup and pressurizer aux spray. A loss of instrument air would result in the valve failing full open thus posing a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-054-IA-005	
VFDR	Q1N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument a is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1N11PV3371A- The Main Steam Atmospheric Relief valve is designed to open in order to relieve steam generator pressure prior to the opening of the safety relief valves. The valves modulate in order to vent steam to the atmosphere a facilitate plant shutdown. A loss of instrument air would result in the valves failing closed and prevent steam generator relief. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-054-IA-006	
VFDR	Q1N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1B - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1N23HV3228B- This valve supplies feed water from the TDAFW Pump. A loss of instrument air could result in the valve failing open and potentially result in a steam generator overfill/overcooling condition. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Area ID: Compliance Basis:	1-054 - Aux Building Elevator Machine Room No. 1 and Elevator No. 1 Shaft VFDRs Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-054-IA-007
VFDR	Q1N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1C - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1N23HV3228C- This valve supplies feed water from the TDAFW Pump. A loss of instrument air could result in the valve failing open and potentially result in a steam generator overfill/overcooling condition. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

٠

ire Area ID: compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Perform Unit 2: NFPA 805, Section 4.2.3 Determini	ance-Based Approach - Fire Risk Evaluation with sin stic Approach	mplifying deterministic assumptions	Fire Area Definitio
Fire Zone ID 1-CTMT	Description Containment, Unit 1			
·				
	· · ·			
ire Safety Analysis Data I	Manager (4.1)	Farley	Run: 08/18/2012 22:08	Page: 973 of 243

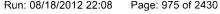
.



•	tainment A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sin A 805, Section 4.2.3 Deterministic Approach	nplifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	, den en e
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump aligned to Train A / Train B power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	 Unit 1: Normal letdown is isolated using performance-based approach orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is performance-based approach isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are performance-based approach isolated using Train A PORVand Train B PORV or the PORV block valves. The RCS to RHR high/low pressure interface is performance-based approach isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve. 		
	 Unit 2: Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve. 		
3.3 RCS Inventory Control - RCP Seal Integri	 Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance-based approach tripping all RCPs, maintaining normal seal injection using Train A/Train B charging pump(s) or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve. 		
	 Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging 		
Fire Safety Analysis Data Manager (4.1)	Farley	Run: 08/18/2012 22	2:08 Page: 974 of 2430

Compliance Basis: Unit 1:	Containment NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sir NFPA 805, Section 4.2.3 Deterministic Approach	nplifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
	pump, Train B charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressure Tra	 Unit 1: Undesired depressurization due to inadvertent spray is performance- based approach prevented by ensuring normal and auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. Unit 2: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 		
4.2 RCS Pressure Control - Positive Pres Control	• Unit 1: Positive control of RCS pressure is accomplished with performance- based approach Train A PORV, Train B PORV or aux spray for pressure reduction and performance-based approach Pressurizer Heater Group B for pressure increase.		
	• Unit 2: Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using Train A/Train B MDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 		
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Performance-based approach shutdown margir is monitored. 2. RCS Pressure - Performance-based approach RCS pressure is monitored. 3. Pressurizer Level - Performance-based approach pressurizer level is monitored. 4. RCS Temperature - Performance-based approach RCS Loop 1/Loop 2/Loop 3 temperature is monitored. 5. SG Pressure - Performance-based approach Steam Generator 1A/1B/1C} pressure is monitored. 6. SG Level - Performance-based approach Steam Generator 1A/1B/1C level is monitored. 	1	
	Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by	,	
Fire Safety Analysis Data Manager (4.1)	Farley	Run: 08/18/2012 22:0	8 Page: 975 of 2430

Fire Safety Analysis Data Manager (4.1)



Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simpl Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	ifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
	PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored.		
7.1 Vital Auxiliaries – Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 		
	 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 	· · ·	
7.2 Vital Auxiliaries – Service Wa	ter Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliàries – Componen Water	Cooling Train A/Train B component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in Containment. There are no automatic suppression systems in Containment. Equipment is qualified for harsh environment, including water spray and vital equipment is located above the sump submergence level that would be expected during fire suppression activities. Therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-055 - Containment Engineering Evaluations Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.





Fire Area ID: 1-055 - Containment Required Fire Pr Compliance Basis: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumption Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		equired Fire Protection Systems and Features istic assumptions		
Required FP System(s)/Feature(Detection	s) Description 1A-22	Required By DID Criteria	Comments Required to meet DID criteria.	

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 1-055
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
Δ LERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	





Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-055-SEP-001
VFDR	N1B21TR0410:AVAILABLE-TE410:AVAILABLE-TE410, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N1B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-002
VFDR	N1B21TR0410:AVAILABLE-TE420:AVAILABLE-TE420, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N1B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 2 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-003
VFDR	N1B21TR0410:AVAILABLE-TE430:AVAILABLE-TE430, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N1B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 3 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

-

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID	U1-1-055-SEP-004	
VFDR	N1B21TR0413:AVAILABLE-TE413:AVAILABLE-TE413, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N1B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U1-1-055-SEP-005	
VFDR	N1B21TR0413:AVAILABLE-TE423:AVAILABLE-TE423, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N1B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 2 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U1-1-055-SEP-006	
VFDR	N1B21TR0413:AVAILABLE-TE433:AVAILABLE-TE433, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N1B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 3 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	



Fire Area ID: Compliance Basis:	1-055 - Containment VFDR Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-055-SEP-007
VFDR	N1B31LI0459A:AVAILABLE:AVAILABLE, PRESSURIZER LEVEL INDICATOR LI-459A (PROTECTION CHANNEL I) - Pressurizer Channel 1, 2, or 3 level indicators provide level indication in the main control room. Fire induced cable damage to instrumentation cables of the indicators could result in inaccurate pressurizer level indication resulting in the potential loss of RCS inventory through the PORVs or relief valves. Failure of the indicators challenges the RCS Inventory Control. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-008
VFDR	N1B31LI0460:AVAILABLE:AVAILABLE, PRESSURIZER LEVEL INDICATOR LI-460 (PROTECTION CHANNEL II) - Pressurizer Channel 1, 2, or 3 level indicators provide level indication in the main control room. Fire induced cable damage to instrumentation cables of the indicators could result in inaccurate pressurizer level indication resulting in the potential loss of RCS inventory through the PORVs or relief valves. Failure of the indicators challenges the RCS Inventory Control .This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-009
VFDR	N1B31LI0461:AVAILABLE:AVAILABLE, PRESSURIZER LEVEL INDICATOR LI-461 (PROTECTION CHANNEL III) - Pressurizer Channel 1, 2, or 3 level indicators provide level indication in the main control room. Fire induced cable damage to instrumentation cables of the indicators could result in inaccurate pressurizer level indication resulting in the potential loss of RCS inventory through the PORVs or relief valves. Failure of the indicators challenges the RCS Inventory Control. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-010
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:08 Page: 982 of 2430

1-055 - Containment VFDRs Fire Area ID: Compliance Basis: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach VFDR N1B31PI0444:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE CONTROL INDICATOR PI-444 - N1B31PI0444 - Pressurizer Pressure: N1B31PI0455 -Pressurizer Pressure: N1B31PI0456 - Pressurizer Pressure: N1B31PI0457 - Pressurizer Pressure: N1B31PI0445 - Pressurizer Pressure: Q1B21PI0402A -RCS Loop C Wide Range Pressure: Q1B21PI0403A - RCS Loop A Wide Range Pressure. These indicators are normally available, only one of the indicators is required available to provide process monitoring RCS Inventory and Pressure Control Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the RCS, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805. Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action. U1-1-055-SEP-011 VFDR ID VFDR N1B31PI0445:AVAILABLE:AVAILABLE. PRESSURIZER PRESSURE CONTROL INDICATOR PI-445 - N1B31PI0444 - Pressurizer Pressure: N1B31PI0455 -Pressurizer Pressure; N1B31PI0456 - Pressurizer Pressure; N1B31PI0457 - Pressurizer Pressure; N1B31PI0445 - Pressurizer Pressure; Q1B21PI0402A -RCS Loop C Wide Range Pressure; Q1B21PI0403A - RCS Loop A Wide Range Pressure. These indicators are normally available, only one of the indicators is required available to provide process monitoring RCS Inventory and Pressure Control Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the RCS, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that Disposition applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action. VFDR ID U1-1-055-SEP-012 N1B31PI0455:AVAILABLE: AVAILABLE, PRESSURIZER PRESSURE INDICATOR PI-455 (PROTECTION CHANNEL I) - N1B31PI0444 - Pressurizer Pressure; VFDR N1B31PI0455 - Pressurizer Pressure; N1B31PI0456 - Pressurizer Pressure; N1B31PI0457 - Pressurizer Pressure; N1B31PI0445 - Pressurizer Pressure; Q1B21PI0402A - RCS Loop C Wide Range Pressure; Q1B21PI0403A - RCS Loop A Wide Range Pressure. These indicators are normally available, only one of the indicators is required available to provide process monitoring RCS Inventory and Pressure Control Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the RCS, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4. This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that Disposition applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Attachment C Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Safety Analysis Data Manager (4.1)





Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID	U1-1-055-SEP-013	
VFDR	N1B31PI0456:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE INDICATOR PI-456 (PROTECTION CHANNEL II) - N1B31PI0444 - Pressurizer Pressure; N1B31PI0455 - Pressurizer Pressure; N1B31PI0456 - Pressurizer Pressure; N1B31PI0457 - Pressurizer Pressure; N1B31PI0445 - Pressurizer Pressure; Q1B21PI0402A - RCS Loop C Wide Range Pressure; Q1B21PI0403A - RCS Loop A Wide Range Pressure. These indicators are normally available, only one of the indicators is required available to provide process monitoring RCS Inventory and Pressure Control Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the RCS, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-014	
VFDR	N1B31PI0457:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE INDICATOR PI-457 (PROTECTION CHANNEL III) - N1B31PI0444 - Pressurizer Pressure; N1B31PI0455 - Pressurizer Pressure; N1B31PI0456 - Pressurizer Pressure; N1B31PI0457 - Pressurizer Pressure; N1B31PI0445 - Pressurizer Pressure; Q1B21PI0402A - RCS Loop C Wide Range Pressure; Q1B21PI0403A - RCS Loop A Wide Range Pressure. These indicators are normally available, only one of the indicators is required available to provide process monitoring RCS Inventory and Pressure Control Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the RCS, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-015	
VFDR	N1C22LI0474:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL INDICATOR LI-474 (PROTECTION CHANNEL I) - N1C22LI0474 - Steam Generator 1A Narrow Range Level Indicator; N1C22LI0475 - Steam Generator 1A Narrow Range Level Indicator; N1C22LI0477 (LT477) - Steam Generator 1A Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-016	
VFDR	N1C22LI0475:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL INDICATOR LI-475 (PROTECTION CHANNEL II) - N1C22LI0476 - Steam Generator 1A Narrow Range Level Indicator; N1C22LI0475 - Steam Generator 1A Narrow Range Level Indicator; N1C22LI0474 - Steam Generator 1A Narrow Range Level Indicator; N1N11LR0477 (LT477) - Steam Generator 1A Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-017	
VFDR	N1C22LI0476:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL INDICATOR LI-476 (PROTECTION CHANNEL III) - N1C22LI0476 - Steam Generator 1A Narrow Range Level Indicator; N1C22LI0475 - Steam Generator 1A Narrow Range Level Indicator; N1C22LI0474 - Steam Generator 1A Narrow Range Level Indicator; N1N11LR0477 (LT477) - Steam Generator 1A Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-018	

Fire Area ID: Compliance Basis:	1-055 - Containment s: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR	N1C22LI0484:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL INDICATOR LI-484 (PROTECTION CHANNEL I) - N1C22LI0486 - Steam Generator 1B Narrow Range Level Indicator; N1C22LI0485 - Steam Generator 1B Narrow Range Level Indicator; N1C22LI0484 - Steam Generator 1B Narrow Range Level Indicator; N1N11LR0477 (LT487) - Steam Generator 1B Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-İ-055-SEP-019	
VFDR	N1C22LI0485:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL INDICATOR LI-485 (PROTECTION CHANNEL II) - N1C22LI0486 - Steam Generator 1B Narrow Range Level Indicator; N1C22LI0485 - Steam Generator 1B Narrow Range Level Indicator; N1C22LI0484 - Steam Generator 1B Narrow Range Level Indicator; N1N11LR0477 (LT487) - Steam Generator 1B Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-020	
VFDR	N1C22LI0486:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL INDICATOR LI-486 (PROTECTION CHANNEL III) - N1C22LI0486 - Steam Generator 1B Narrow Range Level Indicator; N1C22LI0485 - Steam Generator 1B Narrow Range Level Indicator; N1C22LI0484 - Steam Generator 1B Narrow Range Level Indicator; N1N11LR0477 (LT487) - Steam Generator 1B Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-021
VFDR	N1C22LI0494:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL INDICATOR LI-494 (PROTECTION CHANNEL I) - N1C22LI0496 - Steam Generator 1C Narrow Range Level Indicator; N1C22LI0495 - Steam Generator 1C Narrow Range Level Indicator; N1C22LI0494 - Steam Generator 1C Narrow Range Level Indicator; N1N11LR0477 (LT497) - Steam Generator 1C Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-022
VFDR	N1C22LI0495:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL INDICATOR LI-495 (PROTECTION CHANNEL II) - N1C22LI0496 - Steam Generator 1C Narrow Range Level Indicator; N1C22LI0495 - Steam Generator 1C Narrow Range Level Indicator; N1C22LI0494 - Steam Generator 1C Narrow Range Level Indicator; N1N11LR0477 (LT497) - Steam Generator 1C Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
******	[,] U1-1-055-SEP-023

Fire Area ID: Compliance Basis:	1-055 - Containment VFDR Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	N1C22LI0496:AVAILABLE:AVAILABLE, STÉAM GENERATOR 1C NARROW RANGE LEVEL INDICATOR LI-496 (PROTECTION CHANNEL III) - N1C22LI0496 - Steam Generator 1C Narrow Range Level Indicator; N1C22LI0495 - Steam Generator 1C Narrow Range Level Indicator; N1C22LI0494 - Steam Generator 1C Narrow Range Level Indicator; N1N11LR0477 (LT497) - Steam Generator 1C Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-024
VFDR	N1C55NI0031B:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31B - N1C55NI0031B - Source Range Count Rate Indicator NI- 31B; N1C55NI0032B - Source Range Count Rate Indicator NI-32B. These indicators are normally available, only one of the indicators is required available to provide process monitoring Reactivity Control Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the reactivity, and a challenge to the process monitoring capability of Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-055-SEP-025
VFDR	N1C55NI0032B:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32B - N1C55NI0031B - Source Range Count Rate Indicator NI- 31B; N1C55NI0032B - Source Range Count Rate Indicator NI-32B. These indicators are normally available, only one of the indicators is required available to provide process monitoring Reactivity Control Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the reactivity, and a challenge to the process monitoring capability of Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-055-SEP-026
VFDR	N1N11LR0477:AVAILABLE-LT477:AVAILABLE-LT477, STEAM GENERATOR 1A, 1B, 1C, WIDE RANGE LEVEL RECORDER - N1C22LI0476 - Steam Generator 1A Narrow Range Level Indicator; N1C22LI0477 - Steam Generator 1A Narrow Range Level Indicator; N1C22LI0477 - Steam Generator 1A Narrow Range Level Indicator; N1C22LI0474 - Steam Generator 1A Narrow Range Level Indicator; N1C22LI0477 (LT477) - Steam Generator 1A Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-027
VFDR	N1N11LR0477:AVAILABLE-LT487:AVAILABLE-LT487, STEAM GENERATOR 1A, 1B, 1C, WIDE RANGE LEVEL RECORDER - N1C22LI0486 - Steam Generator 1B Narrow Range Level Indicator; N1C22LI0487 - Steam Generator 1B Narrow Range Level Indicator; N1C22LI0484 - Steam Generator 1B Narrow Range Level Indicator; N1C22LI0484 - Steam Generator 1B Narrow Range Level Indicator; N1C22LI0487 - Steam Generator 1B Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-028
VFDR	N1N11LR0477:AVAILABLE-LT497:AVAILABLE-LT497, STEAM GENERATOR 1A, 1B, 1C, WIDE RANGE LEVEL RECORDER - N1C22LI0496 - Steam Generator 1C Narrow Range Level Indicator; N1C22LI0497 - Steam Generator 1C Narrow Range Level Indicator; N1C22LI0497 - Steam Generator 1C Narrow Range Level Indicator; N1C22LI0494 - Steam Generator 1C Narrow Range Level Indicator; N1C22LI0497 - Steam Generator 1C Wide Range Level Recorder. These indicators are normally available, only one of the indicators from the credited Steam Generator is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Run: 08/18/2012 22:08 Page: 989 of 2430





Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-029
VFDR	Q1B13HV0001:CLOSED:CLOSED, RX VESSEL HEAD VENT - Q1B13HV0001 - Reactor Vessel Head Vent and Q1B13HV0002 - Reactor Vessel Head Vent. These valves are normally closed, required closed to prevent loss of RCS inventory. Fire induced cable damage may result in spurious opening of both valves, a diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-030
VFDR	Q1B13HV0002:CLOSED:CLOSED, RX VESSEL HEAD VENT - Q1B13HV0001 - Reactor Vessel Head Vent and Q1B13HV0002 - Reactor Vessel Head Vent. These valves are normally closed, required closed to prevent loss of RCS inventory. Fire induced cable damage may result in spurious opening of both valves, a diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-031
VFDR	Q1B13HV0003:CLOSED:CLOSED, RX VESSEL HEAD VENT - Q1B13HV0003 - Reactor Vessel Head Vent and Q1B13HV0004 - Reactor Vessel Head Vent. These valves are normally closed, required closed to prevent loss of RCS inventory. Fire induced cable damage may result in spurious opening of both valves, a diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

-

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-032
VFDR	Q1B13HV0004:CLOSED:CLOSED, RX VESSEL HEAD VENT - Q1B13HV0003 - Reactor Vessel Head Vent and Q1B13HV0004 - Reactor Vessel Head Vent. These valves are normally closed, required closed to prevent loss of RCS inventory. Fire induced cable damage may result in spurious opening of both valves, a diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-033
VFDR	Q1B21PI0402A:AVAILABLE:AVAILABLE, RCS LOOP C WIDE RANGE PRESSURE INDICATOR PI-402A - N1B31PI0444 - Pressurizer Pressure; N1B31PI0455 - Pressurizer Pressure; N1B31PI0456 - Pressurizer Pressure; N1B31PI0457 - Pressurizer Pressure; N1B31PI0445 - Pressurizer Pressure; Q1B21PI0402A - RCS Loop C Wide Range Pressure; Q1B21PI0403A - RCS Loop A Wide Range Pressure. These indicators are normally available, only one of the indicators is required available to provide process monitoring RCS Inventory and Pressure Control Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the RCS, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-034

Fire Safety Analysis Data Manager (4.1)

/

Run: 08/18/2012 22:08 Page: 991 of 2430

Fire Area ID: Compliance Basis:	1-055 - Containment VFDR Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1B21PI0403A:AVAILABLE:AVAILABLE, RCS LOOP A WIDE RANGE PRESSURE INDICATOR PI-403A - N1B31PI0444 - Pressurizer Pressure; N1B31PI0455 - Pressurizer Pressure; N1B31PI0456 - Pressurizer Pressure; N1B31PI0457 - Pressurizer Pressure; N1B31PI0445 - Pressurizer Pressure; Q1B21PI0402A - RCS Loop C Wide Range Pressure; Q1B21PI0403A - RCS Loop A Wide Range Pressure. These indicators are normally available, only one of the indicators is required available to provide process monitoring RCS Inventory and Pressure Control Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to monitor the RCS, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-035
VFDR	Q1B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 1B DISTRIBUTION PANEL - Due to the necessity of maintaining safe and stable conditions for a period of time longer than 24 hours, positive control of the pressurizes is credited; pressurizer heater Group 1B is credited in Fire Area 1-055. Fire induced cable damage to the power cables of individual heater elements could render Pressurizer Heater Group 1B unavailable for temperature control. Failure of Pressurizer Group 1B challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-036
VFDR	Q1B31PT0455:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE TRANSMITTER PROTECTION CHANNEL I - Although not needed for maintaining safe and stable conditions, a spurious safety injection actuation signal (SIAS) could spuriously start the RHR/LHSI pumps resulting in permanent damage. Fire induced damage to the pressurizer pressure transmitters (located in the fire area) or their associated instrumentation cables could result in a spurious safety injection actuation signal (SIAS) thus damaging the RHR/LHSI pumps and challenging the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

,

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-055-SEP-037
VFDR	Q1B31PT0456:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE TRANSMITTER PROTECTION CHANNEL II - Although not needed for maintaining safe and stable conditions, a spurious safety injection actuation signal (SIAS) could spuriously start the RHR/LHSI pumps resulting in permanent damage. Fire induced damage to the pressurizer pressure transmitters (located in the fire area) or their associated instrumentation cables could result in a spurious safety injection actuation signal (SIAS) thus damaging the RHR/LHSI pumps and challenging the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-038
VFDR	Q1B31PT0457:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE TRANSMITTER PROTECTION CHANNEL III - Although not needed for maintaining safe and stable conditions, a spurious safety injection actuation signal (SIAS) could spuriously start the RHR/LHSI pumps resulting in permanent damage. Fire induced damage to the pressurizer pressure transmitters (located in the fire area) or their associated instrumentation cables could result in a spurious safety injection actuation signal (SIAS) thus damaging the RHR/LHSI pumps and challenging the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-039
VFDR	Q1B31V0027A:OPEN:OPEN/CLOSED, PRESSURIZER PORV ISOLATION - Q1B31V0027A - Pressurizer PORV Isolation; Q1B31V0053 - Pressurizer PORV. The PORV is normally closed and isolation valve normally open, only one of the valves is required closed to prevent loss of RCS inventory. Fire induced cable damage to component may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Run: 08/18/2012 22:08 Page: 993 of 2430

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-055-SEP-040
VFDR	Q1B31V0027A:OPEN:OPEN/CLOSED, PRESSURIZER PORV ISOLATION - Q1B31V0027B - Pressurizer PORV Isolation and Q1B31V0061 - Pressurizer PORV; Q1B31V0027A - Pressurizer PORV Isolation and Q1B31V0053 - Pressurizer PORV. The normally open PORV isolation valve and normally closed PORV valves requires isolation valve to remain open and PORV to cycle to control RCS pressure transient. Fire induced cable damage may result in spuriously closing of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-041
VFDR	Q1B31V0027B:OPEN:OPEN/CLOSED, PRESSURIZER PORV ISOLATION - Q1B31V0027B - Pressurizer PORV Isolation; Q1B31V0061 - Pressurizer PORV. The PORV is normally closed and isolation valve normally open, only one of the valves is required closed to prevent loss of RCS inventory. Fire induced cable damage to component may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-042
VFDR	Q1B31V0027B:OPEN:OPEN/CLOSED, PRESSURIZER PORV ISOLATION - Q1B31V0027B - Pressurizer PORV Isolation and Q1B31V0061 - Pressurizer PORV; Q1B31V0027A - Pressurizer PORV Isolation and Q1B31V0053 - Pressurizer PORV. The normally open PORV isolation valve and normally closed PORV valves requires isolation valve to remain open and PORV to cycle to control RCS pressure transient. Fire induced cable damage may result in spuriously closing of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

.

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-055-SEP-043
VFDR	Q1B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER PORV - Q1B31V0027A - Pressurizer PORV Isolation; Q1B31V0053 - Pressurizer PORV. The PORV is normally closed and isolation valve normally open, only one of the valves is required closed to prevent loss of RCS inventory. Fire induced cable damage to component may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-044
VFDR	Q1B31V0056:MODULATED:CLOSED, PRESSURIZER SPRAY VALVE - Q1B41P0001A - RCP 1A; Q1B31V0056 - Pressurizer Spray Valve. This normally running pump is required to be turned off or the normally modulated pressurizer spray valve needs to be closed to prevent uncontrolled RCS pressure transient. Fire induced cable damage may result in the inability to trip the RCP from the Control Room or spray valve cables and instrument cables/tubing can prevent ability to close spray valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-045
VFDR	Q1B31V0056:MODULATED:CLOSED, PRESSURIZER SPRAY VALVE - Q1B31V0027B - Pressurizer PORV Isolation and Q1B31V0061 - Pressurizer PORV; Q1B31V0027A - Pressurizer PORV Isolation and Q1B31V0053 - Pressurizer PORV. The normally open PORV isolation valve and normally closed PORV valves requires isolation valve to remain open and PORV to cycle to control RCS pressure transient. Fire induced cable damage may result in spuriously closing of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-055-SEP-046
VFDR	Q1B31V0060:MODULATED:CLOSED, PRESSURIZER SPRAY VALVE - Q1B41P0001B - RCP 1B; Q1B31V0060 - Pressurizer Spray Valve. This normally running pump is required to be turned off or the normally modulated pressurizer spray valve needs to be closed to prevent uncontrolled RCS pressure transient. Fire induced cable damage may result in the inability to trip the RCP from the Control Room or spray valve cables and instrument cables/tubing can prevent ability to close spray valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-047
VFDR	Q1B31V0060:MODULATED:CLOSED, PRESSURIZER SPRAY VALVE - Q1B31V0027B - Pressurizer PORV Isolation and Q1B31V0061 - Pressurizer PORV; Q1B31V0027A - Pressurizer PORV Isolation and Q1B31V0053 - Pressurizer PORV. The normally open PORV isolation valve and normally closed PORV valves requires isolation valve to remain open and PORV to cycle to control RCS pressure transient. Fire induced cable damage may result in spuriously closing of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-048
VFDR	Q1B31V0061:CLOSED:OPEN/CLOSED, PRESSURIZER PORV - Q1B31V0027B - Pressurizer PORV Isolation; Q1B31V0061 - Pressurizer PORV. The PORV is normally closed and isolation valve normally open, only one of the valves is required closed to prevent loss of RCS inventory. Fire induced cable damage to component may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

VFDR ID	
	U1-1-055-SEP-049
VFDR	Q1B41P0001A:ON:OFF, RCP 1A - Q1B41P0001A - RCP 1A. This normally running pump is required to be turned off to prevent RCS inventory losses via seal damage and to meet thermo hydraulic analyzed conditions. Fire induced cable damage may result in the inability to trip the RCP from the Control Room, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-050
VFDR	Q1B41P0001A:ON:OFF, RCP 1A - Q1B41P0001A - RCP 1A; Q1B31V0056 - Pressurizer Spray Valve. This normally running pump is required to be turned off or the normally modulated pressurizer spray valve needs to be closed to prevent uncontrolled RCS pressure transient. Fire induced cable damage may result in the inability to trip the RCP from the Control Room or spray valve cables and instrument cables/tubing can prevent ability to close spray valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-052
VFDR	Q1B41P0001B:ON:OFF, RCP 1B - Q1B41P0001B - RCP 1B. This normally running pump is required to be turned off to prevent RCS inventory losses via seal damage and to meet thermo hydraulic analyzed conditions. Fire induced cable damage may result in the inability to trip the RCP from the Control Room, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-053
Fire Safety Analysis Data Ma	anager (4.1) Farley Run: 08/18/2012 22:08 Page: 997 of 243

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1B41P0001B:ON:OFF, RCP 1B - Q1B41P0001B - RCP 1B; Q1B31V0060 - Pressurizer Spray Valve. This normally running pump is required to be turned off or the normally modulated pressurizer spray valve needs to be closed to prevent uncontrolled RCS pressure transient. Fire induced cable damage may result in the inability to trip the RCP from the Control Room or spray valve cables and instrument cables/tubing can prevent ability to close spray valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-055
VFDR	Q1B41P0001C:ON:OFF, RCP 1C - Q1B41P0001C - RCP 1C. This normally running pump is required to be turned off to prevent RCS inventory losses via seal damage and to meet thermo hydraulic analyzed conditions. Fire induced cable damage may result in the inability to trip the RCP from the Control Room, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-057
VFDR	Q1C22LT0474:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL I - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C2
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	VFI Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-055-SEP-058
VFDR	Q1C22LT0474:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL I - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challeng to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-059
VFDR	Q1C22LT0474:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL I - Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challeng to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-060
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:08 Page: 999 of 24

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1C22LT0475:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL II - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-061
VFDR	Q1C22LT0475:AVAILABLE: AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL II - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-062

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	1-055 - Containment VFDF Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1C22LT0475:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL II - Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter, Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter, Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-063
VFDR	Q1C22LT0476:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL III - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-064



٢



Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1C22LT0476:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL III - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter, Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter, Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-065
VFDR	Q1C22LT0476:AVAILABLE:AVAILABLE, STEAM GENERATOR 1A NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL III - Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-066

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1C22LT0484:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL I - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam-Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-067
VFDR	Q1C22LT0484:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL I - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D4020 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D4020 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D4020 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Ge
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-068

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1003 of 2430



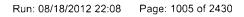






Compliance Basis:	1-055 - Containment VFDRs Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1C22LT0484:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL I - Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter, Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-069
VFDR	Q1C22LT0485:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL II - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter, Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter, Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1B Narrow Range Level Transmitter, Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-070

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1C22LT0485:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL II - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-071
VFDR	Q1C22LT0485:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL II - Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-072





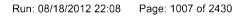




Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1C22LT0486:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL III - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-073
VFDR	Q1C22LT0486:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL III - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-074

Fire Area ID: Compliance Basis:	1-055 - Containment VFDRs Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1C22LT0486:AVAILABLE:AVAILABLE, STEAM GENERATOR 1B NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL III - Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-075
VFDR	Q1C22LT0494:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL I - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Pateo Reseaw Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Pateo Reseaw Generator 1C Narrow Range
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-076

Fire Safety Analysis Data Manager (4.1)



Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q1C22LT0494:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL I - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C2
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-077
VFDR	Q1C22LT0494:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL I - Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-078

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis: 1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach VFDR Q1C22LT0495:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL - TDAFW Supply to Steam Generator 1A. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter, Q1C22LT0475 - Steam Generator 1B Narrow Range Level Transmitter, Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter, Q1C22LT0495 - Steam Generator 1B Narrow Range Level Transmitter, Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495		
		Disposition
VFDR ID	U1-1-055-SEP-079	
VFDR	Q1C22LT0495:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL II - Q1N23HV3228 - TDAFW Supply to Steam Generator 1B. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C2	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-080	

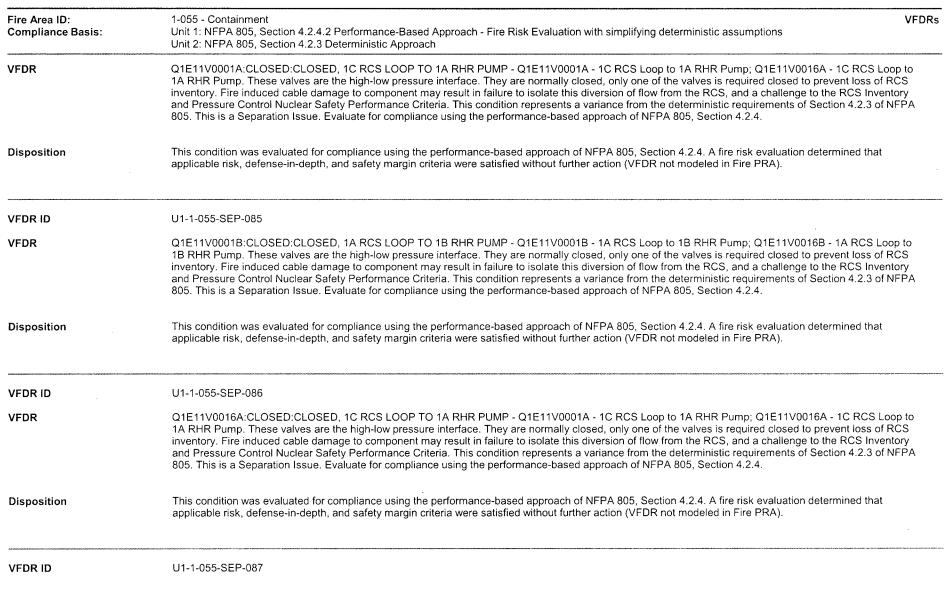
Run: 08/18/2012 22:08 Page: 1009 of 2430

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR	Q1C22LT0495:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL II - Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter. Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter. D1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-081	
VFDR	Q1C22LT0496:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL III - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter. Q1C22LT0484 - Steam Generator 1 Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-082	

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach			
VFDR	Q1C22LT0496:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL III - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; D1C22LT0496 - Steam Generator; D1C22LT0496 - Steam Generator; D1C22LT0496 - Steam Generator; D1C22LT0496 - Steam Generator; D1C22LT0			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U1-1-055-SEP-083			
VFDR	Q1C22LT0496:AVAILABLE:AVAILABLE, STEAM GENERATOR 1C NARROW RANGE LEVEL TRANSMITTER PROTECTION CHANNEL III - Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator; Steam Generator 1C Narrow Range Leve			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U1-1-055-SEP-084			





Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR	Q1E11V0016B:CLOSED:CLOSED, 1A RCS LOOP TO 1B RHR PUMP - Q1E11V0001B - 1A RCS Loop to 1B RHR Pump; Q1E11V0016B - 1A RCS Loop to 1B RHR Pump. These valves are the high-low pressure interface. They are normally closed, only one of the valves is required closed to prevent loss of RCS inventory. Fire induced cable damage to component may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-055-SEP-088		
VFDR	Q1E21V0183:CLOSED:CLOSED, EXCESS LETDOWN HX DISCHARGE - Q1E21V0247 - Excess Letdown Isolation; Q1E21V0250 - Excess Letdown Divert; Q1E21V0246 - Excess Letdown Isolation; Q1E21V0183 - Excess Letdown Heat Exchanger discharge. These valves are normally closed, only one of the isolation valves is required closed to prevent loss of RCS inventory. Fire induced cable damage to component may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-055-SEP-089		
VFDR	Q1E21V0243:CLOSED:OPEN, RCS ALTERNATE CHARGING LINE - Q1E21V0243 - RCS Alternate Charging Line and Q1E21V0244 - RCS Normal Charging Line. The normal charging valve is normally open and the alternate charging line is normally closed at least one valve is required open to provide charging for Reactivity and Inventory Control. Fire induced damage to cables may result in spuriously closing of the valves, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-055-SEP-090		
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:08 Page: 1013 of 2430		



Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR	Q1E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - Q1E21V0243 - RCS Alternate Charging Line and Q1E21V0244 - RCS Normal Charging Line. The normal charging valve is normally open and the alternate charging line is normally closed at least one valve is required open to provide charging for Reactivity and Inventory Control. Fire induced damage to cables may result in spuriously closing of the valves, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-091	
VFDR	Q1E21V0245:CLOSED:CLOSED, RCS PRESSURIZER AUX SPRAY - Q1E21V0245 - RCS Pressurizer Aux Spray Valve. This normally closed valve required closed to prevent uncontrolled RCS pressure transient. Fire induced cable damage may result in spuriously opening of the valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-092	
VFDR	Q1E21V0246:CLOSED:CLOSED, EXCESS LETDOWN ISOLATION VALVE - Q1E21V0247 - Excess Letdown Isolation; Q1E21V0250 - Excess Letdown Dive Q1E21V0246 - Excess Letdown Isolation; Q1E21V0183 - Excess Letdown Heat Exchanger discharge. These valves are normally closed, only one of the isolation valves is required closed to prevent loss of RCS inventory. Fire induced cable damage to component may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-055-SEP-093	

Fire Safety Analysis Data Manager (4.1)

.

١.

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach Q1E21V0247:CLOSED:CLOSED, EXCESS LETDOWN ISOLATION (UNDER REFUELING CANAL) - Q1E21V0247 - Excess Letdown Isolation; Q1E21V02 Excess Letdown Divert; Q1E21V0246 - Excess Letdown Isolation; Q1E21V0183 - Excess Letdown Heat Exchanger discharge. These valves are normally closed, only one of the isolation valves is required closed to prevent loss of RCS inventory. Fire induced cable damage to component may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
VFDR			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-055-SEP-094		
VFDR	Q1E21V0250:TO VCT:TO VCT, EXCESS LETDOWN DIVERT VALVE - Q1E21V0247 - Excess Letdown Isolation; Q1E21V0250 - Excess Letdown Divert; Q1E21V0246 - Excess Letdown Isolation; Q1E21V0183 - Excess Letdown Heat Exchanger discharge. These valves are normally closed, only one of the isolation valves is required closed to prevent loss of RCS inventory. Fire induced cable damage to component may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance fro the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-055-SEP-095		
VFDR	Q1E21V0253A:THROTTLED:MODULATE, LETDOWN ORIFICE ISOLATION 45 GPM - Q1E21HV8149A, Q1E21HV8149B, Q1E21HV8149C - Letdown Orifi Isolation; Q1E21V0367 - Letdown Line Isolation; Q1E21V0368 - Letdown Line Isolation. These valves are normally open, only one of the Letdown Line isolat valves or all three Letdown Orifice isolation valves are required closed to prevent loss of RCS inventory. Fire induced cable damage to component or instrum cabling/tubing may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		



Fire Area ID: 1-055 - Containment Compliance Basis: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach			
/FDR ID U1-1-055-SEP-096			
VFDR	Q1E21V0253B:THROTTLED:MODULATE, LETDOWN ORIFICE ISOLATION 60 GPM - Q1E21HV8149A, Q1E21HV8149B, Q1E21HV8149C - Letdown Orifice Isolation; Q1E21V0367 - Letdown Line Isolation; Q1E21V0368 - Letdown Line Isolation. These valves are normally open, only one of the Letdown Line isolation valves or all three Letdown Orifice isolation valves are required closed to prevent loss of RCS inventory. Fire induced cable damage to component or instrumer cabling/tubing may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-055-SEP-097		
VFDR	Q1E21V0253C:THROTTLED:MODULATE, LETDOWN ORIFICE ISOLATION 60 GPM - Q1E21HV8149A, Q1E21HV8149B, Q1E21HV8149C - Letdown Orifice Isolation; Q1E21V0367 - Letdown Line Isolation; Q1E21V0368 - Letdown Line Isolation. These valves are normally open, only one of the Letdown Line isolation valves or all three Letdown Orifice isolation valves are required closed to prevent loss of RCS inventory. Fire induced cable damage to component or instrumen cabling/tubing may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-055-SEP-098		
VFDR	Q1E21V0367:OPEN:OPEN/CLOSED, LETDOWN LINE ISOLATION - Q1E21HV8149A, Q1E21HV8149B, Q1E21HV8149C - Letdown Orifice Isolation; Q1E21V0367 - Letdown Line Isolation; Q1E21V0368 - Letdown Line Isolation. These valves are normally open, only one of the Letdown Line isolation valves of all three Letdown Orifice isolation valves are required closed to prevent loss of RCS inventory. Fire induced cable damage to component or instrument cabling/tubing may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		

Fire Area ID: Compliance Basis:	1-055 - Containment VFDRs Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-055-SEP-099
VFDR	Q1E21V0368:OPEN:OPEN/CLOSED, LETDOWN LINE ISOLATION - Q1E21HV8149A, Q1E21HV8149B, Q1E21HV8149C - Letdown Orifice Isolation; Q1E21V0367 - Letdown Line Isolation; Q1E21V0368 - Letdown Line Isolation. These valves are normally open, only one of the Letdown Line isolation valves or all three Letdown Orifice isolation valves are required closed to prevent loss of RCS inventory. Fire induced cable damage to component or instrument cabling/tubing may result in failure to isolate this diversion of flow from the RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-100
VFDR	Q1N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1A - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-055-SEP-101
VFDR	Q1N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1B - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0476 - Steam Generator 1A Narrow Range Level Transmitter, Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0485 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0494 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter. The valve is normally open required throttled. The transmitters are normally available, only two of the transmitters per steam generator are required available to provide control to allow throttling of valve or two of either LT474, LT485 or LT496 for Decay Heat Removal Nuclear Performance Criteria. Fire induced cable/tubing damage to component may result in failure to control the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA
Fire Safety Analysis Data M	anager (4.1) Farley Run: 08/18/2012 22:08 Page: 1017 of 2430

Fire Area ID: Compliance Basis:	1-055 - Containment Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach			
805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U1-1-055-SEP-102			
VFDR Q1N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1C - Q1N23HV3228C - TDAFW Supply to Steam Gen Q1C22LT0474 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0475 - Steam Generator 1A Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0484 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0486 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1B Narrow Range Level Transmitter; Q1C22LT0495 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C22LT0496 - Steam Generator 1C Narrow Range Level Transmitter; Q1C				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			

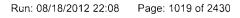
•

,

-

•

Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID 1-075-U1	Description Unit 1 Cable Tunnel - Train A	







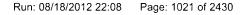


	 Unit 1 Cable Tunnel - Train A Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifyin 	g deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump orswing charging pump aligned to Train B power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train B charging pump or swing charging pump via Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakag Paths	e Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Inte	grity Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves.	-	
4.1 RCS Pressure Control - Pressure Trans	sient Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Press Control	Ire Positive control of RCS pressure is accomplished with performance-based approach Train B PORV for pressure reduction and Pressurizer Heater Group B for pressure increase.)	

	075-U1 - Unit 1 Cable Tunnel - Train A FPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplif	ying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train B MDAFW pu supplying Steam Generator 1C. Main feed is isolated to prevent uncontrolle cooldown.		
6 Process Monitoring	1. Shutdown Margin - Performance-based approach shutdown margin is monitored. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 3. 4. RC Temperature - RCS Loop 3 temperature is monitored by loop hot and cold I RTDs. 5. SG Pressure - Steam Generator A/1B/1C pressure is monitored. SG Level - Steam Generator 1A/1B/1C level is monitored.	S eg	
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by diesel generator EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train B distribution equipment. 3. 125 VDC pow and 120 VAC power is supplied by Train B equipment.		
7.2 Vital Auxiliaries – Service Water	Train B ,service water is provided with two service water pumps in service recirculating to the pond or Train B service water is provided with one servic water pump in service recirculating to the pond and non-essential turbine building loads isolated.	ce	
7.3 Vital Auxiliaries – Component Co Water	ooling Train B component cooling water is provided with non-essential loads isolat	ed.	
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room cooling at essen locations is provided with HVAC equipment corresponding to the service wa train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.







Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Engineering Evaluation
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as we such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a docu rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	

• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Required FP System(s)/Feature(s Water Suppression	1D-77	Required By EEEE/LA	Comments Required to support a fire boundary evaluation.	
Water Suppression Procedures / Guidance	1D-77	DID Criteria Risk Criteria	Required to meet DID criteria. Improvements to procedures necessary to incorporate recovery actions required to mee risk criteria.	
Modifications		Risk Criteria	Modification to replace trip device in panel Q1R42B0001A, breaker LA13.	
Modifications		DID Criteria	Modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available.	
Fire Safety Analysis Data Manager	· (4.1)	Farley	Run: 08/18/2012 22:08 Page: 1023 of 2430	



Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 1-075-U1
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the modification(s), specified recovery actions and the installed suppression system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available and the installed suppression system were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U1-1-0.75-IA-001		
VFDR	Q1B31V0061:OPEN/CLOSED:OPEN/CLOSED, PRESSURIZER PORV - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1B31V0061 - Pressurizer PORV. The valve is normally closed, required to cycle to control RCS pressure. Fire induced damage due to instrument air components prevent the ability to control RCS pressure, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-075-SEP-001		
VFDR	N1B21TR0410:AVAILABLE-TE410:AVAILABLE-TE410, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N1B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.		
VFDR ID	U1-1-075-SEP-002		
VFDR	N1B21TR0410:AVAILABLE-TE420:AVAILABLE-TE420, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N1B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.		





Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U1-1-075-SEP-003		
VFDR	N1B21TR0410:AVAILABLE-TE430:AVAILABLE-TE430, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N1B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.		
VFDR ID	U1-1-075-SEP-004		
VFDR	N1B21TR0413:AVAILABLE-TE413:AVAILABLE-TE413, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N1B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.		
VFDR ID	U1-1-075-SEP-005		
VFDR	N1B21TR0413:AVAILABLE-TE423:AVAILABLE-TE423, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N1B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.		

Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U1-1-075-SEP-006		
VFDR	N1B21TR0413:AVAILABLE-TE433:AVAILABLE-TE433, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N1B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.		
VFDR ID	U1-1-075-SEP-007		
VFDR	N1C55NI0031B:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31B - N1C55NI0031B - Source Range Count Rate Indicator NI- 31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-075-SEP-008		
VFDR	N1C55NI0032B:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32B - N1C55NI0031B - Source Range Count Rate Indicator NI- 31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		

Run: 08/18/2012 22:08 Page: 1027 of 2430









Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U1-1-075-SEP-009		
VFDR	Q1E11P0001A:OFF:ON/OFF, 1A RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-075-SEP-010		
VFDR	Q1E11P0001B:OFF:ON/OFF, 1B RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-075-SEP-013		
VFDR	Q1E21P0002A:STANDBY:ON/OFF, 1A CHARGING/HHSI PUMP - Q1E21P0002A - 1A Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1R41L0001B - 125Vdc Distribution Panel 1B; Q1R43E0001A - Sequencer Bus 1F. The pump is normally in Standby, required off, required off; sequencer normally available, required available; an power supply normally energized, required energized, all required to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-075-SEP-014		
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:08 Page: 1028 of 243		

VFDR	Q1E21P0002B:STANDBY:ON/OFF-TRAIN A, 1B CHARGING/HHSI PUMP - Q1E21P0002A - 1A Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1R41L0001B - 125Vdc Distribution Panel 1B; Q1R43E0001A - Sequencer Bus 1F. The pump is normally in Standby, required off, required off; sequencer normally available, required available; an power supply normally energized, required energized, all required to turn off pump to prevent overcharging		
	Q1R41L0001B - 125Vdc Distribution Panel 1B; Q1R43E0001A - Sequencer Bus 1F. The pump is normally in Standby, required off, required off;		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-075-SEP-015		
VFDR	Q1E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - Q1E21V0016A - HHSI to RCS Cold Leg Isolation. The valve is normally closed, required closed to prevent charging pump run out. Fire induced damage may generate a SIAS to cause a failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-075-SEP-016		
VFDR	Q1E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q1E21V0257 - Charging Pumps to Regen HX. The valve is normally open, required to open to maintain RCS inventory. Fire induced damage to cascading power supply to instruments cabinets (SIAS) may spuriously operate valve after battery depletion or after battery fails due to environmental concerns preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-075-SEP-017		
Fire Safety Analysis Data Ma	lanager (4.1) Farley Run: 08/18/2012 22:08 Page: 1029 of 24		



Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR Q1E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Q1E21V0347 - Charging Flow Control Valve. The v modulated, required modulated to provide makeup. Fire induced damage due to cascading power supply to instruments cabinets, and in may prevent valve positioning, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This c variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using th approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U1-1-075-SEP-018			
VFDR	Q1E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q1E21V0376A - VCT Outlet Isolation; Q1E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced damage on cascading power supply to instruments cabinets (SIAS) may spuriously operat valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U1-1-075-SEP-019			
VFDR	Q1E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q1E21V0376A - VCT Outlet Isolation; Q1E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced damage on cascading power supply to instruments cabinets (SIAS) may spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U1-1-075-SEP-020			

Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q1N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q1N11PV3371B - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage to instrument air components, and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.			
VFDR ID	U1-1-075-SEP-021			
VFDR	Q1N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q1N11PV3371B - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage to instrument air components, and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.			
VFDR ID	U1-1-075-SEP-022			
VFDR	Q1N11PV3371C:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q1N11PV3371C - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage to instrument air components, and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.			
VFDR ID	U1-1-075-SEP-023			

Fire Safety Analysis Data Manager (4.1)

-

Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based A	opproach - Fire Risk Evaluation with simplifying	deterministic assumptions	VFDRs
VFDR	HV3235A. The valve is normally closed, required a spurious instrument signals on loss of battery n Performance Criteria. This condition represents a	OSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - Q1N12V0001A - TDAFP Steam Supply Isolation Valve ally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage generates s on loss of battery may prevent the ability to turn pump off, and a challenge to the Decay Heat Removal Nuclear Safety ondition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. g the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance usin applicable risk, defense-in-depth, and safety man			ined that
VFDR ID	U1-1-075-SEP-024			
VFDR	Q1N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - Q1N12V0001B - TDAFP Steam Supply Isolation Valve HV3235B. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage generates a spurious instrument signals on loss of battery may prevent the ability to turn pump off, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance usin applicable risk, defense-in-depth, and safety mar	g the performance-based approach of NFPA 80 gin criteria were satisfied without further action.	05, Section 4.2.4 _. A fire risk evaluation determ	nined that
VFDR ID	U1-1-075-SEP-025			
VFDR	Q1N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1A - Q1N23P0002 - TDAFW Pump; Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			steam generator loss of battery condition
Disposition	This condition was evaluated for compliance usir applicable risk, defense-in-depth, and safety mar			nined that
VFDR ID	U1-1-075-SEP-026			
Fire Safety Analysis Data	Manager (4.1)	Farley	Run: 08/18/2012 22:08	Page: 1032 of 2430

Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-	Based Approach - Fire Risk Evaluation with simplifyi	ng deterministic assumptions	VFDRs
VFDR	Steam Generator 1B. The pump is norma and overfill. Fire induced damage to instru- may prevent the ability to turn pump off or	DAFW SUPPLY TO STEAM GENERATOR 1B - Q11 Ily off, required off; valve is normally open required off; valve is normally open required off; valve, cascading loss of power to T close valve, and a challenge to the Decay Heat Reputed requirements of Section 4.2.3 of NFPA 805. This 55, Section 4.2.4.	closed to prevent uncontrolled TDAFW supply to s DAFW UPS and spurious instrument signals on Ic moval Nuclear Safety Performance Criteria. This o	steam generator oss of battery condition
Disposition		nce using the performance-based approach of NFPA ety margin criteria were satisfied without further action		ned that
VFDR ID	U1-1-075-SEP-027			
VFDR	Steam Generator 1C. The pump is norma and overfill. Fire induced damage to instru may prevent the ability to turn pump off or	DAFW SUPPLY TO STEAM GENERATOR 1C - Q11 illy off, required off; valve is normally open required off ument air components, cascading loss of power to T r close valve, and a challenge to the Decay Heat Rei stic requirements of Section 4.2.3 of NFPA 805. This 05, Section 4.2.4.	closed to prevent uncontrolled TDAFW supply to s DAFW UPS and spurious instrument signals on lo moval Nuclear Safety Performance Criteria. This o	steam generator oss of battery condition
Disposition		nce using the performance-based approach of NFPA tety margin criteria were satisfied without further action		ned that
VFDR ID	U1-1-075-SEP-028			
VFDR	Generator 1A. The pump is normally off, r overfill. Fire induced damage to instrumer prevent the ability to turn pump off or clos	RIVEN AUX FEEDWATER PUMP - Q1N23P0002 - required off; valve is normally open required closed t nt air components, cascading loss of power to TDAF e valve, and a challenge to the Decay Heat Remova ents of Section 4.2.3 of NFPA 805. This is a Separati	to prevent uncontrolled TDAFW supply to steam g W UPS and spurious instrument signals on loss o al Nuclear Safety Performance Criteria. This condi	enerator and of battery may tion represents a
Disposition		nce using the performance-based approach of NFPA ety margin criteria were satisfied without further action		ned that
VFDR ID	U1-1-075-SEP-029			
Fire Safety Analysis Data M	lanager (4.1)	Farley	Run: 08/18/2012 22:08	Page: 1033 of 2430



Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Bas	ed Approach - Fire Risk Evaluation with simplifyir	ng deterministic assumptions	VFDRs
VFDR	Generator 1B. The pump is normally off, requered overfill. Fire induced damage to instrument a prevent the ability to turn pump off or close vertices.	/EN AUX FEEDWATER PUMP - Q1N23P0002 - 7 uired off; valve is normally open required closed to ir components, cascading loss of power to TDAFV alve, and a challenge to the Decay Heat Removal of Section 4.2.3 of NFPA 805. This is a Separatio	prevent uncontrolled TDAFW supply to steam N UPS and spurious instrument signals on loss Nuclear Safety Performance Criteria. This cor	generator and s of battery may adition represents a
Disposition		using the performance-based approach of NFPA margin criteria were satisfied without further actio		mined that
VFDR ID	U1-1-075-SEP-030			
VFDR	Generator 1C. The pump is normally off, requered overfill. Fire induced damage to instrument a prevent the ability to turn pump off or close v	/EN AUX FEEDWATER PUMP - Q1N23P0002 - uired off; valve is normally open required closed to ir components, cascading loss of power to TDAF\ alve, and a challenge to the Decay Heat Removal of Section 4.2.3 of NFPA 805. This is a Separation	o prevent uncontrolled TDAFW supply to stean W UPS and spurious instrument signals on los I Nuclear Safety Performance Criteria. This cor	n generator and s of battery may ndition represents a
Disposition		using the performance-based approach of NFPA margin criteria were satisfied without further actic		mined that
VFDR ID	U1-1-075-SEP-031			
VFDR	Charging/HHSI Pump; Q1R41L0001B - 125 required off; sequencer normally available, ro overcharging, and a challenge to the RCS In	125V DC DISTRIBUTION PANEL 1B - Q1E21P00 /dc Distribution Panel 1B; Q1R43E0001A - Seque equired available; power supply normally energize ventory and Pressure Control Nuclear Safety Per of NFPA 805. This is a Separation Issue. Evaluate	encer Bus 1F. The pump is normally in Standby ed, required energized, all required to turn off p formance Criteria. This condition represents a	y, required off, ump to prevent variance from the
Disposition		using the performance-based approach of NFPA margin criteria were satisfied without further action		mined that
VFDR ID	U1-1-075-SEP-032			
Fire Safety Analysis Data Man	ager (4.1)	Farley	Run: 08/18/2012 22:08	Page: 1034 of 2430

Fire Area ID: Compliance Basis:	1-075-U1 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1R43E0001A:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 1F - Q1E21P0002A - 1A Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1R41L0001B - 125Vdc Distribution Panel 1B; Q1R43E0001A - Sequencer Bus 1F. The pump is normally in Standby, required off, required off; sequencer normally available, required available; power supply normally energized, required energized, all required to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Run: 08/18/2012 22:08 Page: 1035 of 2430







Fire Area ID: Compliance Basis:	1-075-U2 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition	
Fire Zone ID	Description		
1-075-U2	Unit 1 Cable Tunnel - Train A		

	it 1 Cable Tunnel - Train A ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump aligned to Train B power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train B charging pump or swing charging pump via Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		







Fire Area ID: Compliance Basis:	1-075-U2 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation	with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A B MDAFW pump, or TDAFW pump supplying Steam Generator Main feed is isolated to prevent uncontrolled cooldown.	
6 Process Monitoring	 Shutdown Margin - Shutdown margin is monitored by source detector Ch 1/Ch 2. RCS Pressure - RCS pressure is monito narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wi pressure for Loop 1/Loop 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. RCS Temperature 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold RTDs. SG Pressure - Steam Generator 2A/2B/2C pressure i monitored. SG Level - Steam Generator 2A/2B/2C level is m 	ored by PZR de range level is - RCS Loop leg s
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 2A/SUT generator EDG-2B. 2. 4.16 kV and 600 V power is supplied by distribution equipment. 3. 125 VDC power and 120 VAC power Train A/Train B equipment.	Train A/Train B
7.2 Vital Auxiliaries – Service Wa	Train B service water is provided with two service water pumps recirculating to the pond or Train B service water is provided wit water pump in service recirculating to the pond and non-essenti- building loads isolated.	h one service
7.3 Vital Auxiliaries – Componen Water	t Cooling Train B component cooling water is provided with non-essential	loads isolated.
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room cooli locations is provided with HVAC equipment corresponding to the train.	5

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-075-U2 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	Νο
Functionally Equivalent	Νο
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,

- Elements with construction features equal to 3-hr boundaries were credited as such,
- The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID: Compliance Basis:	1-075-L NFPA 8	J2 - Unit 1 Cable Tunnel - Train 305, Section 4.2.4.2 Performanc	A ce-Based Approach - Fire Risk E	Required Fire Protection Systems and Feature Evaluation with simplifying deterministic assumptions
Required FP System(s)/Feature(Water Suppression Water Suppression Procedures / Guidance	(s)	Description 1D-77 1D-77	Required By EEEE/LA DID Criteria Risk Criteria	Comments Required to support a fire boundary evaluation. Required to meet DID criteria. Improvements to procedures necessary to incorporate recovery actions required to risk criteria.
				2
			·	

Fire Area ID: Compliance Basis:	1-075-U2 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 1-075-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions and the installed suppressino system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed suppression system was identified as required for DID
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	





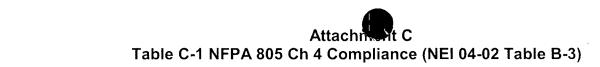
Fire Area ID: Compliance Basis:	1-075-U2 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-1-075-HVAC-001
VFDR	Q2R42B0001A:ENERGIZED:ENERGIZED-BC2A, 125V DC BUS 2A - This component, 125V DC Bus 2A, requires HVAC support to remain functional. Failure to ensure availability of HVAC for this electrical component challenges electrical support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.
VFDR ID	U2-1-075-HVAC-002
VFDR	Q2R15A0006:ENERGIZED:ENERGIZED-SUT2A, 4160V SWITCHGEAR BUS 2F - This component, Switchgear 2F, requires HVAC support to remain functional. Failure to provide HVAC support to this Electrical Component challenges electrical support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-1-075-HVAC-003
VFDR	Q2R17B0001:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2A - This component, MCC 2A, requires HVAC support to remain functional. Failure to ensure HVAC availability of this component challenges electrical support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-1-075-SEP-001

Fire Area ID: Compliance Basis:	1-075-U2 - Unit 1 Cable Tunnel - Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q1R43E0001A:AVAILABLE:AVAILABLE-SHED, SEQUENCER BUS 1F - Fire induced circuit failure to the sequencer circuit could impact power availability if offsite power is not available. Without proper sequencer operation, the Diesel Generator will not be able to satisfy various measures that permit shedding and loading of selective loads. Offsite power associated with unit 2 may not be available due to a loss of HVAC to Bus 2F, however this is contingent upon the survivability timeframe. Failure to ensure the availability of AC power challenges electrical support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		

Run: 08/18/2012 22:08 Page: 1043 of 2430







Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
1-076-U1	Unit 1 Cable Tunnel - Train B	

Fire Safety Analysis Data Manager (4.1)

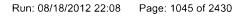
.

Run: 08/18/2012 22:08 Page: 1044 of 2430

.

	1 Cable Tunnel - Train B tion 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump aligned to Train A power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, swing charging pump via Train A power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with performance-based approach Train A PORV for pressure reduction and Pressurizer Heater Group A for pressure increase.		

Fire Safety Analysis Data Manager (4.1)







Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation	on with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train supplying Steam Generator 1A/1B. Main feed is isolated to pr uncontrolled cooldown.	
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by sourc Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by range Ch 1/Ch 2, RCS wide range pressure for Loop 3. 3. Pr Pressurizer level is monitored by PZR level Ch 1/Ch 2. 4. RC RCS Loop 1/Loop 2 temperature is monitored by loop hot and RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressur monitored. 6. SG Level - Steam Generator 1A/1B/1C level is	PZR narrow essurizer Level - S Temperature - d cold leg e is
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 1A/S generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied distribution equipment. 3. 125 VDC power and 120 VAC pow Train A equipment.	by Train A
7.2 Vital Auxiliaries – Service Wa	Train A service water is provided with two service water pump recirculating to the pond or Train A service water is provided water pump in service recirculating to the pond and non-esse building loads isolated.	with one service
7.3 Vital Auxiliaries – Componen Water	t Cooling Train A component cooling water is provided with non-essent	ial loads isolated.
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A HVAC. Room co locations is provided with HVAC equipment corresponding to train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.







Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-	Based Approach - Fire Risk E	Required valuation with simplifying deterministic assumption	d Fire Protection Systems and Features
Required FP System(s)/Feature(Water Suppression Water Suppression Passive Procedures / Guidance	s) Description 1D-98 1D-98 Restricted transient controls	Required By EEEE/LA DID Criteria EEEE/LA Risk Criteria	risk criteria.	ation. b incorporate recovery actions required to n
Modifications		Risk Criteria	Modification to replace trip device in panel	Q1R42B0001B, breaker LB07.
Fire Safety Analysis Data Manage	(4.4)	Farley	Dur	n: 08/18/2012 22:08 Page: 1048 of 2430

Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Title	FRE for Fire Area 1-076-U1		
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) or NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with specified recovery actions and the installed suppression system and modification(s), the applicable risk, defense-in-depth, and safety margin criteria were satisfied.		
Δ CDF			
Δ LERF			
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed suppression system was identified as required for DID		
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.		
Comments			







Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-1-076-IA-001
VFDR	Q1B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER PORV - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. The valve is normally closed, required to cycle to control RCS pressure. Fire induced damage due to instrument air components prevent the ability to control RCS pressure, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.
VFDR ID	U1-1-076-IA-002
VFDR	Q1E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1E21V0347 - Charging Flow Control Valve. The valve is normally modulated, required modulated to provide makeup. Fire induced damage due to instrument air failures may prevent valve positioning, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-IA-003
VFDR	Q1N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1N11PV3371A - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage to instrument air components prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-1-076-IA-004
VFDR	Q1N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1N11PV3371B - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage to instrument air components prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-IA-005
VFDR	Q1N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1A - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. The valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced damage to instrument air components may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-IA-006
VFDR	Q1N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1B - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. The valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced damage to instrument air components may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.





Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-1-076-IA-007
VFDR	Q1N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1C - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. The valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced damage to instrument air components may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-001
VFDR	N1B31PT0445:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE CONTROL PRESSURE TRANSMITTER - Q1B31V0053 - Pressurizer PORV; N1B31PT0445 - Pressurizer Pressure Control Pressure Transmitter. The valve is normally closed, required to cycle to control RCS pressure. Fire induced damage due to instrument air components and transmitter signal prevent the ability to control RCS pressure, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-002
VFDR	Q1E11P0001A:OFF:ON/OFF, 1A RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-003
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:08 Page: 1052 of 243

Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1E11P0001B:OFF:ON/OFF, 1B RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal to spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-006
VFDR	Q1E21P0002B:STANDBY:ON/OFF-TRAIN B, 1B CHARGING/HHSI PUMP - Q1E21P0002C - 1C Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1R41L0001F - 125Vdc Distribution Panel 1F; Q1R43E0001B - Sequencer Bus 1G. The pump is normally in Standby, required off, required off; sequencer normally available, required available; an power supply normally energized, required energized, all required to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-007
VFDR	Q1E21P0002C:STANDBY:ON/OFF, 1C CHARGING/HHSI PUMP - Q1E21P0002C - 1C Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1R41L0001F - 125Vdc Distribution Panel 1F; Q1R43E0001B - Sequencer Bus 1G. The pump is normally in Standby, required off, required off; sequencer normally available, required available; an power supply normally energized, required energized, all required to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-008
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:08 Page: 1053 of 243

.



Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1E21V0016B:CLOSED:CLOSED-TRAINB, HHSI TO RCS COLD LEG ISOLATION - Q1E21V0016B - HHSI to RCS Cold Leg Isolation. The valve is normally closed, required closed to prevent charging pump run out. Fire induced damage due to cascading power supply to instruments cabinets (SIAS) after battery depletion or after battery fails due to environmental concerns may cause failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-009
VFDR	Q1E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q1E21V0257 - Charging Pumps to Regen HX. The valve is normally open, required to open to maintain RCS inventory. Fire induced damage to cascading power supply to instruments cabinets (SIAS) may spuriously operate valve after battery depletion or after battery fails due to environmental concerns preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-010
VFDR	Q1E21V0258:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q1E21V0258 - Charging Pumps to Regen HX. The valve is normally open, required to open to maintain RCS inventory. Fire induced cable damage and spurious SIAS signal may close the valve preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-011

-

Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q1E21V0376A - VCT Outlet Isolation; Q1E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced damage on cascading power supply to instruments cabinets (SIAS) may spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-012
VFDR	Q1E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q1E21V0376A - VCT Outlet Isolation; Q1E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced damage on cascading power supply to instruments cabinets (SIAS) may spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-013
VFDR	Q1R41L0001E:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 1E - Q1E21P0002C - 1C Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1R41L0001E - 125Vdc Distribution Panel 1E; Q1R43E0001B - Sequencer Bus 1G. The pump is normally in Standby, required off, required off; sequencer normally available, required available; an power supply normally energized, required energized, all required to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.?
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-076-SEP-014

Fire Safety Analysis Data Manager (4.1)

.



Fire Area ID: Compliance Basis:	1-076-U1 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
VFDR	Q1R43E0001B:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 1G - Q1E21P0002C - 1C Charging/HHSI Pump; Q1E21P0002B - 1B Charging// Pump; Q1R41L0001F - 125Vdc Distribution Panel 1F; Q1R43E0001B - Sequencer Bus 1G. The pump is normally in Standby, required off, required off; sequencer normally available, required available; an power supply normally energized, required energized, all required to turn off pump to prevent overcha and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the determinis requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Sec 4.2.4.	rging, tic
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Area ID: Compliance Basis:	1-076-U2 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
1-076-U2	Unit 1 Cable Tunnel - Train B	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1057 of 2430



-





	1 Cable Tunnel - Train B tion 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump aligned to Train A power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.	
Paths	Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuringauxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	

Fire Area ID: Compliance Basis:	1-076-U2 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalua	tion with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train or TDAFW pump supplying Steam Generator 2A/2B/2C. Ma to prevent uncontrolled cooldown.	
6 Process Monitoring	 Shutdown Margin - Shutdown margin is monitored by sou detector Ch 1/Ch 2. RCS Pressure - RCS pressure is monarrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS pressure for Loop 1/Loop 3. Pressurizer Level - Pressuri monitored by PZR level Ch 1/Ch 2/Ch 3. RCS Temperat 1/Loop 2/Loop 3 temperature is monitored by loop hot and c RTDs. SG Pressure - Steam Generator 2A/2B/2C pressure monitored. SG Level - Steam Generator 2A/2B/2C level 	onitored by PZR S wide range zer level is ure - RCS Loop old leg ure is
7.1 Vital Auxiliaries – Electrical	1.Electrical power is supplied by off-site power via SUT 2A/S generator EDG1-2A/EDG-2B.2.4.16 kV and 600 V power is A/Train B distribution equipment.3.125 VDC power and 120 supplied by Train A/Train B equipment.	supplied by Train
7.2 Vital Auxiliaries – Service Wa	ter Train A service water is provided with two service water purr recirculating to the pond or Train A service water is provided water pump in service recirculating to the pond and non-ess building loads isolated.	with one service
7.3 Vital Auxiliaries – Component Water	Cooling Train A component cooling water is provided with non-esser	tial loads isolated.
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room c locations is provided with HVAC equipment corresponding to train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.









Fire Area ID: Compliance Basis:	1-076-U2 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	• The construction of the boundary and the potential issue with the element in question was described,
	The fire hazards and fire protection features on both sides of the barrier were described,
	• Elements with construction features equal to 3-hr boundaries were credited as such,
	• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Compliance Basis: NF			Required Fire Protection Systems and Features
Required FP System(s)/Feature(s)	Description	Required By	Comments
Water Suppression	1D-98	EEEE/ĽA	Required to support a fire boundary evaluation.
Water Suppression	1D-98	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire boundary evaluation.

Fire Safety Analysis Data Manager (4.1)









Fire Area ID: Compliance Basis:	1-076-U2 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 1-076-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed suppression system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
Δ LERF	and the second
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed suppression system was identified as required for DID
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Area ID: Compliance Basis:	1-076-U2 - Unit 1 Cable Tunnel - Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-1-076-SEP-001
VFDR	Q1P16V0522:CLOSED:CLOSED, SW TO D/G 1B - In order to preserve SW supply inventory, valve Q1P16V0422 which supplies the Unit 2 DG with service water must be isolated. Fire induced circuit failure could result in spurious opening of the valve, thereby limiting the amount of Service Water Inventory. Failure to ensure the establishment of Service Water challenges service water Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-1-076-SEP-002
VFDR	Q1R16B0509:ENERGIZED:ENERGIZED-U1, 600V LOAD CENTER 1S/2S - Load Center 1S/2S is required to support the functionality of the Service Water Emergency Recirculation valve Q2P16V0538, which must open in order to support the establishment of Train B Service Water. The cited circuit failures on Cables 1DBES02F and 1VBL1E10A may result in a loss of DC control power to the load center, but not the AC supply. Furthermore a fault on cable 1DYES07P would require a loss of control power on the respective load breaker to cause a loss of the supply. If the Load Center is able to remain intact in order to support the pond recirculation lineup (i.e. open Valve V0538) then loss of the supply afterwards is irrelevant. Failure to establish Train B Independent Service Water prevents the establishment of Train B Power, which challenges service water Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-1-076-SEP-003
VFDR	Q2P16V0538:CLOSED:OPEN, SW RECIRC TO POND TRAIN B - Service Water Recirculation to the Pond is credited in the analysis. Valve Q2P16V0538 (SW Recirc to Pond) is required open to establish the recirculation lineup. Fire induced circuit damage to the cited circuit can only disable the auto-open feature of the valve, or spuriously open the valve. These failures enforce the credited functionality. If timing requirements are necessary to establish a recirc lineup however, inopportune opening of the valve could pose a problem. Failure to establish SW challenges service water Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	1-077 - Condensate Storage Tank NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID 1-CST	Description Condensate Storage Tank	
		,
		,

Fire Area ID: Compliance Basis:		ensate Storage Tank ection 4.2.3 Deterministic Approach		Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Rea	ctor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Mair Conditions	ntain Subcritical	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.		
3.1 RCS Inventory Control -	- RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Paths	- Isolate Leakage	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		· .
3.3 RCS Inventory Control -	- RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		,
4.1 RCS Pressure Control -	Pressure Transient	 Unit 1: Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray are not operating. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 		
		 Unit 2: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 	· .	
4.2 RCS Pressure Control - Control	Positive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
		. False	Dum, 09/19/2012 22:0	D

Fire Safety Analysis Data Manager (4.1)

Farley

Run: 08/18/2012 22:08 Page: 1065 of 2430









Fire Area ID: Compliance Basis:	1-077 - Condensate Storage Tank NFPA 805, Section 4.2.3 Deterministic Approach	Performance Ge
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump and TDAFW pump supp Generator 1A/1B/1C. Main feed is isolated to prevent und 	lying Steam
	 Unit 2: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump, or TDAFW pump suppl Generator 2A/2B/2C. Main feed is isolated to prevent und 	ying Steam
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitorange detector Ch 1/Ch 2. 2. RCS Pressure - RCS press PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety char range pressure for Loop 1/Loop 3. 3. Pressurizer Level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe 1/Loop 2/Loop 3 temperature is monitored by loop hot ar RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C premonitored. 6. SG Level - Steam Generator 1A/1B/1C level 2. Steam Generator 1A/1B/1C level 2. Steam Generator 1A/1B/1C level 3. Steam Generator 1. Steam Generator 1	sure is monitored by nel, and RCS wide - Pressurizer level is rature - RCS Loop d cold leg ssure is
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitorange detector Ch 1/Ch 2. 2. RCS Pressure - RCS press PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety char range pressure for Loop 1/Loop 3. 3. Pressurizer Level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe 1/Loop 2/Loop 3 temperature is monitored by loop hot ar RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C premonitored. 6. SG Level - Steam Generator 2A/2B/2C level 	sure is monitored by nel, RCS wide - Pressurizer level is rrature - RCS Loop d cold leg essure is
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power v diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 supplied by Train A/Train B distribution equipment. 3. 1 120 VAC power is supplied by Train A/Train B equipmen 	V power is 25 VDC power and
	 Unit 2: 1. Electrical power is supplied by off-site power v diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 supplied by Train A/Train B distribution equipment. 3. 1 120 VAC power is supplied by Train A/Train B equipmen 	I V power is 25 VDC power and
7.2 Vital Auxiliaries Service Wate	Train A/Train B service water is provided with two service service recirculating to the pond or Train A/Train B service with one service water pump in service recirculating to the essential turbine building loads isolated.	water is provided
7.3 Vital Auxiliaries Component	Cooling Water Train A/Train B component cooling water is provided with isolated.	non-essential loads

١.

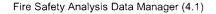
.

.

Fire Area ID: Compliance Basis:	1-077 - Condensate Storage Tank NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.









Fire Area ID: Compliance Basis:	1-077 - Condensate Storage Tank Engineering Evaluations NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	Νο
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID: Compliance Basis:	1-077 - Condensate Storage Tank NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title Summary	N/A This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
Δ CDF Δ LERF DID Maintained Safety Margin Maintained Comments		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1069 of 2430







Fire Area ID: Compliance Basis:	1-078 - Reactor Makeup Storage Tank NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
1-RWMT	Reactor Makeup Storage Tank	
-		

Fire Area ID: Compliance Basis:	1-078 - Reactor Makeup Storage Tank NFPA 805, Section 4.2.3 Deterministic Approach	Performance
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the	Control Room.
2.1 Reactivity Control - Reacto	Trip Reactor is manually tripped from the 0	Control Room.
2.2 Reactivity Control - Maintai Conditions	Subcritical conditions are maintained	r from the RWST using Train A charging
3.1 RCS Inventory Control - RC	 Roo inventory is controlled using that 	in A charging pump, Train B charging in A/Train B power aligned to the RWST.
3.2 RCS Inventory Control - Iso Paths	Normal letdown is isolated using orific valve, or a letdown path containment isolated using one or more excess let PZR PORV leakage paths are isolate PORV. The RCS to RHR high/low pre Train A/Train B RHR inboard isolation outboard isolation valve.	isolation valve. Excess letdown is down or containment isolation valves. d using Train A PORV and Train B essure interface is isolated using the
3.3 RCS Inventory Control - R	RCPs, maintaining normal seal injecti charging pump or swing charging pum	barriers. RCP seal injection paths are ischarge seal injection lines. CCW to ng containment isolation valves or the
4.1 RCS Pressure Control - Pr	 Onit 1: Ondesired depressunzation d 	due to inadvertent spray is prevented by are not operating. Undesired pressure ng all pressurizer heater groups.
4.2 RCS Pressure Control - Pc Control	FOSILIVE COLITION OF RCS pressure is ac	ccomplished with Train A PORV, Train B ction and Pressurizer Heater Group A/B

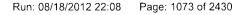


Fire Area ID: Compliance Basis:	1-078 - Reactor Makeup Stu NFPA 805, Section 4.2.3 D			Performance Goals
Performance Goal	Method of	Accomplishment	Comments	
5 Decay Heat Removal	MDAFW,	ecay heat removal during HSD is accomplished usin Train B MDAFW pump and TDAFW pump supplying r 1A/1B/1C. Main feed is isolated to prevent uncontr	Steam	
	MDAFW,	ecay heat removal during HSD is accomplished usin Train B MDAFW pump, or TDAFW pump supplying r 2A/2B/2C. Main feed is isolated to prevent uncontr	Steam	
6 Process Monitoring	range det PZR narr range pre monitored 1/Loop 2/ RTDs. 5.	Shutdown Margin - Shutdown margin is monitored tector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure ow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, assure for Loop 1/Loop 3. 3. Pressurizer Level - Pre d by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperatu /Loop 3 temperature is monitored by loop hot and co . SG Pressure - Steam Generator 1A/1B/1C pressur d. 6. SG Level - Steam Generator 1A/1B/1C level is	is monitored by and RCS wide ssurizer level is re - RCS Loop Id leg re is	
	range del PZR narr range pre monitore 1/Loop 2/ RTDs. 5	Shutdown Margin - Shutdown margin is monitored tector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure ow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, essure for Loop 1/Loop 3. 3. Pressurizer Level - Pre d by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperatu /Loop 3 temperature is monitored by loop hot and co . SG Pressure - Steam Generator 2A/2B/2C pressu d. 6. SG Level - Steam Generator 2A/2B/2C level is	is monitored by RCS wide ssurizer level is re - RCS Loop Id leg re is	
7.1 Vital Auxiliaries Electrical	diesel ge supplied	Electrical power is supplied by off-site power via SU nerator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V p by Train A/Train B distribution equipment. 3. 125 V power is supplied by Train A/Train B equipment.	ower is	
	diesel ge supplied	Electrical power is supplied by off-site power via SU nerator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V p by Train A/Train B distribution equipment. 3. 125 V power is supplied by Train A/Train B equipment.	ower is	
7.2 Vital Auxiliaries Service Wa	service rec with one se	ain B service water is provided with two service wate irculating to the pond or Train A/Train B service wate ervice water pump in service recirculating to the pon- urbine building loads isolated.	er is provided	
7.3 Vital Auxiliaries Componen	Cooling Water Train A/Tra	ain B component cooling water is provided with non-	essential loads	

Fire Area ID: Compliance Basis:	1-078 - Reactor Makeup Storage Tank NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Roon essential locations is provided with HVAC equipment corresponding service water train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.









Fire Area ID: Compliance Basis:	1-078 - Reactor Makeup Storage Tank Engineering Ev NFPA 805, Section 4.2.3 Deterministic Approach	aluation
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared a such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3 rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	

• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

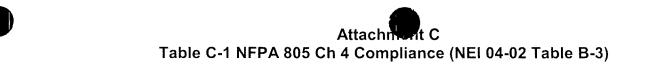
• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID: Compliance Basis:	1-078 - Reactor Makeup Storage Tank NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title Summary	N/A This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
Δ CDF Δ LERF DID Maintained Safety Margin Maintained Comments		

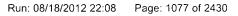




Fire Area ID: Compliance Basis:	1-079 - Refueling Water Storage Tank Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID 1-RWST	Description Refueling Water Storage Tank	

1

Compliance Basis: Unit) - Refueling Water Storage Tank I: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk E 2: NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goa valuation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcr Conditions	tical Subcritical conditions are maintained by isolating the VCT to r dilution and by charging borated water from the RWST using pump, Train B charging pump or swing charging pump via Tra power.	Train A charging
3.1 RCS Inventory Control - RCS Mak	up RCS inventory is controlled using Train A charging pump, Tra pump or swing charging pump via Train A/Train B power align	
3.2 RCS Inventory Control - Isolate Le Paths	kage Normal letdown is isolated using orifice isolation valves, a leto valve, or a letdown path containment isolation valve. Excess I isolated using one or more excess letdown or containment iso PZR PORV leakage paths are isolated using Train A PORV a PORV. The RCS to RHR high/low pressure interface is isolate Train A/Train B RHR inboard isolation valve and Train A/Train outboard isolation valve.	etdown is vlation valves. nd Train B ed using the
3.3 RCS Inventory Control - RCP Seal	Integrity Maintain RCP Seal Integrity - RCP seal integrity is maintained RCPs, maintaining normal seal injection using Train A chargir charging pump or swing charging pump via Train A/Train B po preventing failure of the RCP thermal barriers. RCP seal inject secured by isolating the supply and discharge seal injection lin RCP thermal barriers are isolated using containment isolation CCW to RCP thermal barrier isolation valve.	ng pump, Train B ower, and tion paths are nes. CCW to
4.1 RCS Pressure Control - Pressure	 • Unit 1: Undesired depressurization due to inadvertent spray ensuring normal and auxiliary spray are not operating. Under increase is prevented by deenergizing all pressurizer heater 	esired pressure
	 Unit 2: Undesired depressurization due to inadvertent spray ensuring auxiliary spray valve remains closed and the Loop RCPs are shut off. Undesired pressure increase is prevente deenergizing all pressurizer heater groups. 	1 and Loop 2
4.2 RCS Pressure Control - Positive P Control	essure Positive control of RCS pressure is accomplished with Train A PORV or aux spray for pressure reduction and Pressurizer He for pressure increase.	



.

Fire Area ID: Compliance Basis:	1-079 - Refueling Water Storage Tank Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalu Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	uation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using MDAFW, Train B MDAFW pump and TDAFW pump supplying Generator 1A/1B/1C. Main feed is isolated to prevent uncontrol 	Steam
	 Unit 2: Decay heat removal during HSD is accomplished using MDAFW, Train B MDAFW pump, or TDAFW pump supplying S Generator 2A/2B/2C. Main feed is isolated to prevent uncontrol 	eam
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, ai range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Press monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure monitored. 6. SG Level - Steam Generator 1A/1B/1C level is n 	monitored by nd RCS wide surizer level is - RCS Loop leg is
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, R range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Press monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure monitored. 6. SG Level - Steam Generator 2A/2B/2C level is r 	monitored by CS wide surizer level is - RCS Loop leg is
7.1 Vital Auxiliaries – Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V pov supplied by Train A/Train B distribution equipment. 3. 125 VD 120 VAC power is supplied by Train A/Train B equipment. 	veris
	 Unit 2: 1. Electrical power is supplied by off-site power via SUT diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V pow supplied by Train A/Train B distribution equipment. 3. 125 VD- 120 VAC power is supplied by Train A/Train B equipment. 	veris
7.2 Vital Auxiliaries – Service W	Yater Train A/Train B service water is provided with two service water p service recirculating to the pond or Train A/Train B service water with one service water pump in service recirculating to the pond essential turbine building loads isolated.	is provided
7.3 Vital Auxiliaries – Compone Water	nt Cooling Train A/Train B component cooling water is provided with non-es isolated.	sential loads

Fire Area ID: Compliance Basis:	1-079 - Refueling Water Storage Tank Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.







Fire Area ID: Compliance Basis:	1-079 - Refueling Water Storage Tank Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

,

Fire Area ID: Compliance Basis:	1-079 - Refueling Water Storage Tank Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 1-079
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	





-

Fire Area ID: Compliance Basis:	1-079 - Refueling Water Storage Tank Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	VFDRs
VFDR ID	U1-1-079-SEP-001	
VFDR N1F16LI4075A:ENERGIZED:ENERGIZED, RWST A TRAIN LEVEL INDICATOR - RWST indication is required in order to monitor the inventor RWST, as the RWST is the credited suction source for RCS Makeup. Fire induced circuit failure to the RWST level instrumentation N1F16LI40 N1F16LI4075B could render the instrumentation unavailable and/or result in erroneous indication. This failure challenges the RCS Inventory N Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separ Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		ety
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

-

.

Fire Area ID: Compliance Basis:	1-080 - Low Voltage Switchyard - Unit 1 NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
1-080A	Main Transformer No.3	
1-080B	Main Transformer No.2	
1-080C	Main Transformer No.1	
1-080D	Main Transformer (Spare)	
1-080E	Unit Aux Transformer No. 1A	
1-080F	Unit Aux Transformer (Spare Cubicle)	
1-080G	Startup Aux Transformer No. 1A	
1-080H	Startup Aux Transformer No. 1B	
1-080J	Startup Aux Transformer (Spare)	
1-080K	Low Voltage Switchyard - General Area, Unit 1	







Fire Area ID: Compliance Basis:		oltage Switchyard - Unit 1 ction 4.2.3 Deterministic Approach		Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor	Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintair Conditions	n Subcritical	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.		
3.1 RCS Inventory Control - RC	S Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Iso Paths	late Leakage	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RC	P Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		· · ·
4.1 RCS Pressure Control - Pre	essure Transient	 Unit 1: Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray are not operating. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 		
		• Unit 2: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Pos Control	sitive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1084 of 2430

	080 - Low Voltage Switchyard - Unit 1 PA 805, Section 4.2.3 Deterministic Approach	Performance Goal
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 	
	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 	
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by diesel generator EDG1-2A/EDG- 1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 	
	• Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.	
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.	
7.3 Vital Auxiliaries Component Cool	ing Water Train A/Train B component cooling water is provided with non-essential loads isolated.	
Fire Safety Analysis Data Manager (4.1) Farley	Run: 08/18/2012 22:08 Page: 1085 of 2430





Fire Area ID: Compliance Basis:	1-080 - Low Voltage Switchyard - Unit 1 NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	,
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. Each outdoor deluge system provides local protection for individual transformers, and are designed (using curbs, etc.) so water will remain in the vicinity of the affected equipment. Therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	1-080 - Low Voltage Switchyard - Unit 1 Engineering Evaluations RFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	The fire hazards and fire protection features on both sides of the barrier were described,
	 Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.



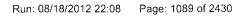


.

	I-080 - Low Voltage Switchyard - Unit 1 NFPA 805, Section 4.2.3 Deterministic Approac	Required Fire Protection Systems and Features	
Required FP System(s)/Feature(s) Description	Required By	Comments
Water Suppression	1TR-64	EEEE/LA	Required to support a fire boundary evaluation.
Water Suppression	1TR-66	EEEE/LA	Required to support a fire boundary evaluation.
Water Suppression	1TR-67	EEEE/LA	Required to support a fire boundary evaluation.
Water Suppression	1TR-68	EEEE/LA	Required to support a fire boundary evaluation.
Water Suppression	1TR-69	EEEE/LA	Required to support a fire boundary evaluation.
Passive	Combustibles and flammable liquid control	EEEE/LA	Required to support a fire area boundary evaluation.
Passive	Curbs	EEEE/LA	Required to support a fire area boundary evaluation.
Passive	Curbs	EEEE/LA	Required to support an engineering evaluation.

Fire Area ID: Compliance Basis:	1-080 - Low Voltage Switchyard - Unit 1 NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
Δ CDF		
Δ LERF		
DID Maintained		
Safety Margin Maintained		
Comments		

Fire Safety Analysis Data Manager (4.1)



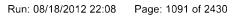


Fire Area ID: Compliance Basis:		1-081-U1 - Turbine Building Battery Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition	
Fire	e Zone ID	Description		
1-0	081-U1	Turbine Building Battery Room		

	081-U1 - Turbine Building Battery Room FPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		Performance Goals	
Performance Goal	Method of Accomplishment	Comments		
1 Primary Control Station	Plant shutdown is performed from the Control Room.	·		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.			
2.2 Reactivity Control - Maintain Subo Conditions	critical Subcritical conditions are maintained by isolating the VCT to p dilution and by charging borated water from the RWST using pump, Train B charging pump or swing charging pump via Tra power.	Frain A charging		
3.1 RCS Inventory Control - RCS Ma	keup RCS inventory is controlled using Train A charging pump, Tra pump or swing charging pump via Train A/Train B power aligr			
3.2 RCS Inventory Control - Isolate L Paths	eakage Normal letdown is isolated using orifice isolation valves, a leto valve, or a letdown path containment isolation valve. Excess I isolated using one or more excess letdown or containment iso PZR PORV leakage paths are isolated using Train A PORV a PORV. The RCS to RHR high/low pressure interface is isolate Train A/Train B RHR inboard isolation valve and Train A/Train outboard isolation valve.	etdown is lation valves. nd Train B id using the		
3.3 RCS Inventory Control - RCP Sea	al Integrity Maintain RCP Seal Integrity - RCP seal integrity is maintained -based approach tripping all RCPs, maintaining normal seal in Train A charging pump, Train B charging pump or swing char Train A/Train B power, and preventing failure of the RCP ther RCP seal injection paths are secured by isolating the supply a seal injection lines. CCW to RCP thermal barriers are isolated containment isolation valves or the CCW to RCP thermal barr valve.	jection using jing pump via nal barriers. nd discharge using		
4.1 RCS Pressure Control - Pressure	Transient Undesired depressurization due to inadvertent spray is preven normal and auxiliary spray valves remain closed. Undesired p is prevented by performance-based approach deenergizing a heater groups.	ressure increase		
4.2 RCS Pressure Control - Positive I Control	Pressure Positive control of RCS pressure is accomplished with Train A PORV or aux spray for pressure reduction and Pressurizer He for pressure increase.			

Fire Safety Analysis Data Manager (4.1)

.





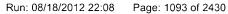
	1-081-U1 - Turbine Building Battery Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		Performance Goals	
Performance Goal	Method of Accomplishment	Comments		
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Trair B MDAFW pump and TDAFW pump supplying Steam Gener Main feed is isolated to prevent uncontrolled cooldown.			
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by sou detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monarrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressuri: monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperatu 1/Loop 2/Loop 3 temperature is monitored by loop hot and c RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressu- monitored. 6. SG Level - Steam Generator 1A/1B/1C level i	nitored by PZR RCS wide range zer level is ure - RCS Loop old leg ure is		
7.1 Vital Auxiliaries – Electrical	 Electrical power is supplied by diesel generator EDG1-2A 2. 4.16 kV and 600 V power is supplied by Train A/Trai equipment. 3. 125 VDC power and 120 VAC power is supp A/Train B equipment. 	n B distribution		
7.2 Vital Auxiliaries – Service Wa	ter Train A/Train B service water is provided with two service water is provided with two service water service recirculating to the pond or Train A/Train B service water pump in service recirculating to the presential turbine building loads isolated.	ater is provided		
7.3 Vital Auxiliaries – Component Water	Cooling Train A/Train B component cooling water is provided with no isolated.	n-essential loads		
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A/Train B HVAC. essential locations is provided with HVAC equipment correspondence water train.			

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-081-U1 - Turbine Building Battery Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,

- Elements with construction features equal to 3-hr boundaries were credited as such,
- The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.







-

Fire Area ID: 1-081-U1 - Turbine Building Battery Room Required Fire Protection S Compliance Basis: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions	
Required FP System(s)/Feature(s	s) Description	Required By	Comments
Modifications		Risk Criteria	Modification to provide fuse or other electrical isolation device at the DC shunt

Modification to provide fuse or other electrical isolation device at the DC shunt connection point.

.

Fire Area ID: Compliance Basis:	1-081-U1 - Turbine Building Battery Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 1-081-U1
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the modification to provide fuse or other electrical isolation device at the DC shunt connection point, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
Δ LERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	





Fire Area ID: Compliance Basis:	1-081-U1 - Turbine Building Battery Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-1-081-SEP-001
VFDR	N1B31L0001C:ON:OFF, PRESSURIZER HEATER GROUP 1C DISTRIBUTION PANEL; N1B31L0001D:ON:OF, PRESSURIZER HEATER GROUP 1D DISTRIBUTION PANEL;N1B31L0001E:ON:OF, PRESSURIZER HEATER GROUP 1E DISTRIBUTION PANEL - In order to prevent uncontrolled RCS pressurization the Pressurizer Heaters must be tripped. A loss of control power to 125V DC Distribution panel 1G and 1H could prevent remote tripping of Pressurizer Group 1C, 1D (powered from 1G) and 1E (powered from 1H). Panel 1G fails due to fire induced circuit failure to Bus 1K(N1R41L0502) and Battery 1D (N1R42B0505B) while panel 1H fails due to fire induced circuit failure to prevent remote tripping of Pressure transients challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-081-SEP-002
VFDR	Q1B41P0001A:ON:OFF, RCP 1A - In order to support the natural circulation cool down process, the Reactor Coolant Pumps must be tripped. A loss of control power to 125V DC Distribution panel 1G, due to fire induced circuit failure to Bus 1K (N1R42L0502) and Battery 1D (N1R42B0505B) would prevent remote tripping of Reactor Coolant Pump 1A. This failure challenges the RCS Inventory Control/Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-081-SEP-003
VFDR	Q1B41P0001B:ON:OFF, RCP 1B - In order to support the natural circulation cool down process, the Reactor Coolant Pumps must be tripped. A loss of control power to 125V DC Distribution panel 1H, due to fire induced circuit failure to Bus 1J(N1R41L0501) and Battery 1C (N1R42B0505A) would prevent remote tripping of Reactor Coolant Pump 1B. This failure challenges the RCS Inventory Control/Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	1-081-U1 - Turbine Building Battery Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U1-1-081-SEP-004	
VFDR	Q1B41P0001C:ON:OFF, RCP 1C - In order to support the natural circulation cool down process, the Reactor Coolant Pumps must be tripped. A loss of control power to 125V DC Distribution panel 1G, due to fire induced circuit failure to Bus 1K (N1R41L0502) and Battery 1D (N1R42B0505B) would prevent remote tripping of Reactor Coolant Pump 1C. This failure challenges the RCS Inventory Control/Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	







 Fire Area ID:
 1-081-U2 - Turbine Building Battery Room
 Fire Area Definition

 Compliance Basis:
 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
 Fire Area Definition

 Fire Zone ID
 Description

1-081-U2

Turbine Building Battery Room

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1098 of 2430

	Turbine Building Battery Room Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integri	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressure Transie	nt Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		

Fire Safety Analysis Data Manager (4.1)

.

Run: 08/18/2012 22:08 Page: 1099 of 2430



Fire Area ID: Compliance Basis:	1-081-U2 - Turbine Building Battery Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Eval	uation with simplifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using T B MDAFW pump, or TDAFW pump supplying Steam Gen Main feed is isolated to prevent uncontrolled cooldown.		
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, F pressure for Loop 1/Loop 3. 3. Pressurizer Level - Press monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe 1/Loop 2/Loop 3 temperature is monitored by loop hot and RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pre monitored. 6. SG Level - Steam Generator 2A/2B/2C lev	monitored by PZR RCS wide range urizer level is rature - RCS Loop d cold leg ssure is	
7.1 Vital Auxiliaries – Electrical	 Electrical power is supplied by diesel generator EDG1 2B. 2. 4.16 kV and 600 V power is supplied by Train A/T equipment. 3. 125 VDC power and 120 VAC power is su A/Train B equipment. 	rain B distribution	
7.2 Vital Auxiliaries – Service Wa	Train A/Train B service water is provided with two service service recirculating to the pond or Train A/Train B servic with one service water pump in service recirculating to the essential turbine building loads isolated.	e water is provided	
7.3 Vital Auxiliaries – Componer Water	t Cooling Train A/Train B component cooling water is provided with isolated.	non-essential loads	
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A/Train B HVA essential locations is provided with HVAC equipment corr service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-081-U2 - Turbine Building Battery Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	Νο
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	The fire hazards and fire protection features on both sides of the barrier were described,
	• Elements with construction features equal to 3-hr boundaries were credited as such,
	• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Run: 08/18/2012 22:08 Page: 1101 of 2430







Fire Area ID: Compliance Basis:	1-081-U2 - Turbine Building Battery F NFPA 805, Section 4.2.4.2 Performa		Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions
Required FP System(s)/Feature	(s) Description	Required By	Comments
Detection	1T-4	DID Criteria	Required to meet DID criteria.

Fire Area ID: Compliance Basis:	1-081-U2 - Turbine Building Battery Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Title	FRE for Fire Area 1-081-U2		
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFL NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depti safety margins. The fire risk evaluation determined that with the installed detection system, the applicable risk, defense-in-depth, and safety margin criteri satisfied.		
ΔCDF			
ΔLERF			
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID		
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.		
Comments			







Fire Area ID: Compliance Basis:	1-081-U2 - Turbine Building Battery Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-1-081-SEP-001
VFDR	N2B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL - Pressurizer Heater Group 2E must remain off in order to maintain an appropriate Pressurizer Level and pressure. Failure to trip the pressurizer heater group due to a loss of DC control power will challenge the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	1-082 - Turbine Building Lube Oil Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID 1-082	Description Lube Oil Storage Room	
•		
	· ·	

Fire Safety Analysis Data Manager (4.1)







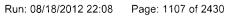




	Building Lube Oil Storage Room tion 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	

Fire Area ID: Compliance Basis:	1-082 - Turbine Building Lube Oil Storage Room NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled coordinates the states of the states		
	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled coordinates and the states of the st		
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitor PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored 	ored by 8 wide level is Loop	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monito PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wid range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored 	ored by e level is Loop	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SU diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power 120 VAC power is supplied by Train A/Train B equipment. 		
	 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SL diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power 120 VAC power is supplied by Train A/Train B equipment. 		
7.2 Vital Auxiliaries Service Wa	Train A/Train B service water is provided with two service water pumps service recirculating to the pond or Train A/Train B service water is prov with one service water pump in service recirculating to the pond and nor essential turbine building loads isolated.	ided	
7.3 Vital Auxiliaries Component	t Cooling Water Train A/Train B component cooling water is provided with non-essential isolated.	loads	

Fire Safety Analysis Data Manager (4.1)





Fire Area ID: Compliance Basis:	1-082 - Turbine Building Lube Oil Storage Room NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		· · · · · · · · · · · · · · · · · · ·

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Drainage capacity in the general Turbine Building area exceeds expected fire suppression flows. Local hazards protected by sprinkler or water spray systems have sufficient curbing and discharage of manual suppression water in adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

 \mathbf{x}

Fire Area ID: Compliance Basis:	1-082 - Turbine Building Lube Oil Storage Room Engineering Evalue NFPA 805, Section 4.2.3 Deterministic Approach Engineering Evalue	ations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,	

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.







Fire Area ID: Compliance Basis:	1-082 - Turbine Building Lube Oil Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
Δ CDF		
ΔLERF		
DID Maintained		
Safety Margin Maintained		
Commente		

Comments

,

.

Fire Area ID: Compliance Basis:	1-083 - Turbine Building Oil Storage Room NFPA 805, Section 4.2.3 Deterministic Approach		Fire Area Definition
Fire Zone ID 1-083	Description Oil Storage Room		
		·	

Run: 08/18/2012 22:08 Page: 1111 of 2430





	rbine Building Oil Storage Room , Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integ	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transi	ent Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressu Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	

	1-083 - Turbine Building Oil Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goal
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using MDAFW, Train B MDAFW pump and TDAFW pump supplying Generator 1A/1B/1C. Main feed is isolated to prevent uncontri- 	Steam
	 Unit 2: Decay heat removal during HSD is accomplished using MDAFW, Train B MDAFW pump, or TDAFW pump supplying Generator 2A/2B/2C. Main feed is isolated to prevent uncontri- 	Steam
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored I range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pre monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperatur 1/Loop 2/Loop 3 temperature is monitored by loop hot and co RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressur monitored. 6. SG Level - Steam Generator 1A/1B/1C level is 	is monitored by and RCS wide ssurizer level is e - RCS Loop d leg e is
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored l range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pre monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperatur 1/Loop 2/Loop 3 temperature is monitored by loop hot and co RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressur monitored. 6. SG Level - Steam Generator 2A/2B/2C level is 	is monitored by RCS wide ssurizer level is e - RCS Loop d leg e is
7.1 Vital Auxiliaries Electrical	 Unit1: 1. Electrical power is supplied by off-site power via SU diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V p supplied by Train A/Train B distribution equipment. 3. 125 VI 120 VAC power is supplied by Train A/Train B equipment. 	ower is
	 Unit 2: 1. Electrical power is supplied by off-site power via SL diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V p supplied by Train A/Train B distribution equipment. 3. 125 VI 120 VAC power is supplied by Train A/Train B equipment. 	ower is
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service water service recirculating to the pond or Train A/Train B service water with one service water pump in service recirculating to the pond essential turbine building loads isolated.	r is provided
7.3 Vital Auxiliaries Component Co	boling Water Train A/Train B component cooling water is provided with non-e isolated.	ssential loads

Fire Safety Analysis Data Manager (4.1)



Fire Area ID: Compliance Basis:	1-083 - Turbine Building Oil Storage Room NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Drainage capacity in the general Turbine Building area exceeds expected fire suppression flows. Local hazards protected by sprinkler or water spray systems have sufficient curbing and discharage of manual suppression water in adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-083 - Turbine Building Oil Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	Νο	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a docum rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,	

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

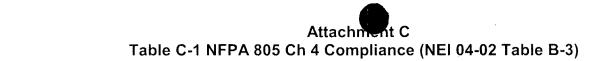
• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Run: 08/18/2012 22:08 Page: 1115 of 2430







Fire Area ID: Compliance Basis:	1-083 - Turbine Building Oil Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
Δ CDF		
ΔLERF	·	
DID Maintained		
Safety Margin Maintained		
Comments		

Fire Area ID: Compliance Basis:	1-086 - Turbine Building Auxilia NFPA 805, Section 4.2.3 Deter	ry Steam Generator ministic Approach	Fire Area Definitio
Fire Zone ID 1-086	Description Auxiliary Steam Generator		
Fire Safety Analysis Data N	Manager (4.1)	Farley	Run: 08/18/2012 22:08 Page: 1117 of 243



	e Building Auxiliary Steam Generator ction 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	

	-086 - Turbine Building Auxiliary Steam Generator JFPA 805, Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldow 	n.
	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldow 	n.
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 	is
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored I PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 	is
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1E diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 	
	 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2E diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 	· •
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.	
7.3 Vital Auxiliaries Component Co	oling Water Train A/Train B component cooling water is provided with non-essential loads isolated.	3



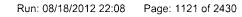


Fire Area ID: Compliance Basis:	1-086 - Turbine Building Auxiliary Steam Generator NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Drainage capacity in the general Turbine Building area exceeds expected fire suppression flows. Local hazards protected by sprinkler or water spray systems have sufficient curbing and discharage of manual suppression water in adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-086 - Turbine Building Auxiliary Steam Generator NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NEPA 805. Therefore, a fire risk evaluation is not required.	
ΔCDF		
Δ LERF		
DID Maintained		
Safety Margin Maintained		
Comments		





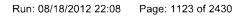






Fire Area ID: Compliance Basis:	1-090 - Aux Building Combustible Storage & Filter Unit Room NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
0107	107 Combustible Storage/Filter Unit Room	

Fire Area ID: Compliance Basis:	1-090 - Aux Building Combustible Storage & Filter Unit Room NFPA 805, Section 4.2.3 Deterministic Approach		
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control F	Room.	
2.1 Reactivity Control - Reactor T	rip Reactor is manually tripped from the Control Re	pom.	
2.2 Reactivity Control - Maintain Conditions	Subcritical Subcritical conditions are maintained by isolatin dilution and by charging borated water from the pump, Train B charging pump or swing chargin power.	RWST using Train A charging	
3.1 RCS Inventory Control - RCS	Makeup RCS inventory is controlled using Train A charge pump or swing charging pump via Train A/Train		
3.2 RCS Inventory Control - Isola Paths	te Leakage Normal letdown is isolated using orifice isolation valve, or a letdown path containment isolation visolated using one or more excess letdown or or PZR PORV leakage paths are isolated using T PORV. The RCS to RHR high/low pressure into Train A/Train B RHR inboard isolation valve an outboard isolation valve.	valve. Excess letdown is containment isolation valves. rain A PORV and Train B erface is isolated using the	
3.3 RCS Inventory Control - RCF	Seal Integrity Maintain RCP Seal Integrity - RCP seal integrit RCPs, maintaining normal seal injection using charging pump or swing charging pump via Tra preventing failure of the RCP thermal barriers. secured by isolating the supply and discharge a RCP thermal barriers are isolated using contain CCW to RCP thermal barrier isolation valve.	Train A charging pump, Train B ain A/Train B power, and RCP seal injection paths are seal injection lines. CCW to	
4.1 RCS Pressure Control - Pres	sure Transient Undesired depressurization due to inadvertent ensuring auxiliary spray valve remains closed RCPs are shut off. Undesired pressure increas all pressurizer heater groups.	and the Loop 1 and Loop 2	
4.2 RCS Pressure Control - Posit Control	ive Pressure Positive control of RCS pressure is accomplish PORV or aux spray for pressure reduction and for pressure increase.		



	090 - Aux Building Combustible Storage & Filter Unit Room PA 805, Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using MDAFW, Train B MDAFW pump and TDAFW pump supplying S Generator 1A/1B/1C. Main feed is isolated to prevent uncontroll 	iteam
	 Unit 2: Decay heat removal during HSD is accomplished using MDAFW, Train B MDAFW pump, or TDAFW pump supplying SI Generator 2A/2B/2C. Main feed is isolated to prevent uncontrol 	eam
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, ar range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Press monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure monitored. 6. SG Level - Steam Generator 1A/1B/1C level is n 	monitored by Id RCS wide urizer level is - RCS Loop leg is
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, R range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Press monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure monitored. 6. SG Level - Steam Generator 2A/2B/2C level is n 	monitored by CS wide urizer level is - RCS Loop leg is
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V pov supplied by Train A/Train B distribution equipment. 3. 125 VD0 120 VAC power is supplied by Train A/Train B equipment. 	/er is
	 Unit 2: 1. Electrical power is supplied by off-site power via SUT diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V pow supplied by Train A/Train B distribution equipment. 3. 125 VD 120 VAC power is supplied by Train A/Train B equipment. 	ver is
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service water p service recirculating to the pond or Train A/Train B service water with one service water pump in service recirculating to the pond a essential turbine building loads isolated.	is provided
7.3 Vital Auxiliaries Component Coo	ling Water Train A/Train B component cooling water is provided with non-es isolated.	sential loads

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1124 of 2430

Fire Area ID: Compliance Basis:	1-090 - Aux Building Combustible Storage & Filter Unit Room NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1125 of 2430

١







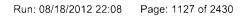
Fire Area ID: Compliance Basis:	1-090 - Aux Building Combustible Storage & Filter Unit Room Engineering Evaluat NFPA 805, Section 4.2.3 Deterministic Approach	ions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	Νο	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,	
	 The construction of the boundary and the potential issue with the element in question was described, 	

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

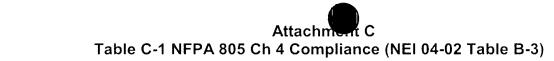
• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

ire Area ID:1-090 - Aux Building Combustible Storage & Filter Unit Roomompliance Basis:NFPA 805, Section 4.2.3 Deterministic Approach		Required Fire Protection Systems and Features
Description	Required By	Comments
1A-132	EEEE/LA	Required to support a fire boundary evaluation.
1A-132	EEEE/LA	Required to support a fire boundary evaluation.
Restricted transient controls	EEEE/LA	Required to support a fire boundary evaluation.
	Description 1A-132 1A-132	DescriptionRequired By1A-132EEEE/LA1A-132EEEE/LA









Fire Area ID: Compliance Basis:	1-090 - Aux Building Combustible Storage & Filter Unit Room NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
Δ CDF		
ΔLERF		
DID Maintained		
Safety Margin Maintained		
Comments		

Fire Area ID: Compliance Basis:	1-092 - Drumming Station & Storage & Combustible Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition		
Fire Zone ID	Description	· · · · · · · · · · · · · · · · · · ·		
0420	420 Drum Storage/Combustible Storage Room			
0421	421 Drumming Station/Combustible Storage Room			

.

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1129 of 2430

-



.



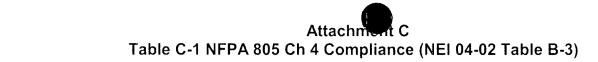
	I-092 - Drumming Station & Storage & Combustible Storage Room NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Tri	p Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Su Conditions	ubcritical Subcritical conditions are maintained by isolating the VC dilution and by charging borated water from the RWST of pump, Train B charging pump or swing charging pump or swin	using Train A charging	
3.1 RCS Inventory Control - RCS N	Makeup RCS inventory is controlled using Train A charging pum pump or swing charging pump via Train A/Train B powe		
3.2 RCS Inventory Control - Isolate Paths	 Leakage Normal letdown is isolated using orifice isolation valves, valve, or a letdown path containment isolation valve. Ex isolated using one or more excess letdown or containmed PZR PORV leakage paths are isolated using Train A PC PORV. The RCS to RHR high/low pressure interface is Train A/Train B RHR inboard isolation valve and Train A outboard isolation valve. 	cess letdown is ent isolation valves. DRV and Train B isolated using the	
3.3 RCS Inventory Control - RCP S	Seal Integrity Maintain RCP Seal Integrity - RCP seal integrity is main RCPs, maintaining normal seal injection using Train A c charging pump or swing charging pump via Train A/Trai preventing failure of the RCP thermal barriers. RCP sea secured by isolating the supply and discharge seal inject RCP thermal barriers are isolated using containment iso CCW to RCP thermal barrier isolation valve.	harging pump, Train B n B power, and I injection paths are tion lines. CCW to	
4.1 RCS Pressure Control - Pressu	ure Transient Undesired depressurization due to inadvertent spray is ensuringauxiliary spray valve remains closed and the Lo RCPs are shut off.Undesired pressure increase is preveall pressurizer heater groups.	pop 1 and Loop 2	
4.2 RCS Pressure Control - Positiv Control	Pressure Positive control of RCS pressure is accomplished with PORV or aux spray for pressure reduction and Pressuri for pressure increase.		

Fire Area ID: Compliance Basis:	1-092 - Drumming Station & Storage & Combustible Storage Room NFPA 805, Section 4.2.3 Deterministic Approach		
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplish MDAFW, Train B MDAFW pump and TDAFW pump s Generator 1A/1B/1C. Main feed is isolated to prevent 	supplying Steam	
	 Unit 2: Decay heat removal during HSD is accomplish MDAFW, Train B MDAFW pump, or TDAFW pump so Generator 2A/2B/2C. Main feed is isolated to prevent 	upplying Steam	
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is morange detector Ch 1/Ch 2. 2. RCS Pressure - RCS p PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety or range pressure for Loop 1/Loop 3. 3. Pressurizer Le monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tex 1/Loop 2/Loop 3 temperature is monitored by loop ho RTDs. 5. SG Pressure - Steam Generator 1A/1B/10 monitored. 6. SG Level - Steam Generator 1A/1B/10 	pressure is monitored by channel, and RCS wide vel - Pressurizer level is mperature - RCS Loop t and cold leg pressure is	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is morange detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure pZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety or range pressure for Loop 1/Loop 3. 3. Pressurizer Le monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Ter 1/Loop 2/Loop 3 temperature is monitored by loop hor RTDs. 5. SG Pressure - Steam Generator 2A/2B/20 monitored. 6. SG Level - Steam Generator 2A/2B/20 	pressure is monitored by channel, RCS wide vel - Pressurizer level is mperature - RCS Loop t and cold leg pressure is	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site pow- diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and supplied by Train A/Train B distribution equipment. 3 120 VAC power is supplied by Train A/Train B equipr 	600 V power is . 125 VDC power and	
	 Unit 2: 1. Electrical power is supplied by off-site power diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and supplied by Train A/Train B distribution equipment. 3.120 VAC power is supplied by Train A/Train B equipment. 	600 V power is . 125 VDC power and	
7.2 Vital Auxiliaries Service Wal	ter Train A/Train B service water is provided with two service service recirculating to the pond or Train A/Train B service water pump in service recirculating to essential turbine building loads isolated.	vice water is provided	
7.3 Vital Auxiliaries Component	Cooling Water Train A/Train B component cooling water is provided w isolated.	ith non-essential loads	

Run: 08/18/2012 22:08 Page: 1131 of 2430







Fire Area ID: Compliance Basis:	1-092 - Drumming Station & Storage & Combustible Storage Room NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-092 - Drumming Station & Storage & Combustible Storage Room · En NFPA 805, Section 4.2.3 Deterministic Approach	gineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a document rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	The fire areas, fire zones and rooms on both sides of the barrier were identified,	
	 The construction of the boundary and the potential issue with the element in question was described, 	
	 The fire hazards and fire protection features on both sides of the barrier were described, 	

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Run: 08/18/2012 22:08 Page: 1133 of 2430

Fire Area ID: Compliance Basis:	1-092 - Drumming Station & Storage & Combustible Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Fitle	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
1 CDF		
LERF		
DID Maintained		
Safety Margin Maintained		
Comments		

 Fire Area ID:
 1-094 - Aux Building Combustible Storage Room
 Fire Area Definition

 Compliance Basis:
 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
 Fire Area Definition

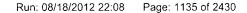
 Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
 Fire Area Definition

Fire Zone ID Description

0167

167 Combustible Storage Room

Fire Safety Analysis Data Manager (4.1)







Compliance Basis: Unit 1: NFPA 80		ilding Combustible Storage Room 05, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 05, Section 4.2.3 Deterministic Approach	Performance Goals	
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Tr	rip	Reactor is manually tripped from the Control Room.		ı
2.2 Reactivity Control - Maintain S Conditions	Subcritical	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump aligned to Train A / Train B power.		
3.1 RCS Inventory Control - RCS	Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolat Paths	te Leakage	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity		Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressure Transient		Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		

Fire Area ID: 1-094 - Aux Building Combustible Storage Room Compliance Basis: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assum Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		plifying deterministic assumptions	Performance Goals	
Performance Goal		Method of Accomplishment	Comments	
4.2 RCS Pressure Control - Po Control	sitive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal		 Unit 1: Decay heat removal during HSD is accomplished using Train A/Train B MDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
		 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 	`	
6 Process Monitoring		 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 	• •	
		• Unit 2: 1. 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C level is monitored.		
7.1 Vital Auxiliaries – Electrical		• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
		 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 		•

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1137 of 2430









Fire Area ID: Compliance Basis:			Performance Goals	
Performance Goal		Method of Accomplishment	Comments	
7.2 Vital Auxiliaries – Service Water		Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Component Cooling Water		Train A/Train B component cooling water is provided with non-essential load isolated.	ls	
7.4 Vital Auxiliaries – HVAC		Control Room cooling is provided by Train A/Train B HVAC. Room cooling a essential locations is provided with HVAC equipment corresponding to the service water train.	t	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-094 - Aux Building Combustible Storage Room Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach			
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3			
Inactive	No			
Functionally Equivalent	No			
Adequate for the Hazard	Yes			
Summary	Purpose:			
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.			
	Bases for Acceptability:			
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,			
	 The construction of the boundary and the potential issue with the element in question was described, 			

- The fire hazards and fire protection features on both sides of the barrier were described,
- Elements with construction features equal to 3-hr boundaries were credited as such,
- The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Run: 08/18/2012 22:08 Page: 1139 of 2430





Fire Area ID: 1-094 - Aux Building Combustible Storage Room Required Fire Pro Compliance Basis: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach			Required Fire Protection Systems and Features Risk Evaluation with simplifying deterministic assumptions
Required FP System(s)/Feature	(s) Description	Required By	Comments
	1A-27	DID Criteria	Required to meet DID criteria.

1-094 - Aux Building Combustible Storage Room Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	valuation
FRE for Fire Area 1-094	
A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFI NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in dept safety margins. The fire risk evaluation determined that with the installed detection system, the applicable risk, defense-in-depth, and safety margin criter satisfied.	th and
The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalan Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of FRE for this area, the installed detection system was identified as required for DID.	
All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.	ce
	Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach FRE for Fire Area 1-094 A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VF NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in dept safety margins. The fire risk evaluation determined that with the installed detection system, the applicable risk, defense-in-depth, and safety margin criter satisfied. The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalar Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of FRE for this area, the installed detection system was identified as required for DID. All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance riteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data

Comments

~









Fire Area ID: Compliance Basis:	1-094 - Aux Building Combustible Storage Room Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	VFDRs
VFDR ID	U1-1-094-SEP-001	
VFDR Q1N12HV3226:CLOSED:CLOSED, TDAFWP TURBINE STEAM SUPPLY ISOLATION - Closure of the MSIVs and steam supply lines to the TDAFW required to avoid uncontrolled RCS depressurization. Fire induced cable damage to the control circuit of the TDAFWP supply isolation valve could spopen the valve allowing steam to be supplied to the turbine. Failure of this valve challenges the Decay Heat Removal Nuclear Safety Performance C This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for com using the performance-based approach of NFPA 805, Section 4.2.4.		usly on.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

-

.

Fire Area ID: Compliance Basis:	1-095 - Aux Building Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
0171	171 Storage Room/Combustible Storage Room	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1143 of 2430

,

~





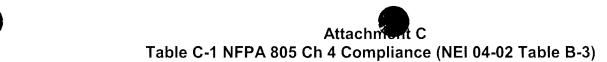


	uilding Storage Room ection 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuringauxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off.Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	

Fire Safety Analysis Data Manager (4.1)

	095 - Aux Building Storage Room FPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump and TDAFW pump sup Generator 1A/1B/1C. Main feed is isolated to prevent un 	olying Steam	
	 Unit 2: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump, or TDAFW pump supp Generator 2A/2B/2C. Main feed is isolated to prevent un 	lying Steam	
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monit range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pres PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety cha range pressure for Loop 1/Loop 3. 3. Pressurizer Level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temp 1/Loop 2/Loop 3 temperature is monitored by loop hot ar RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pr monitored. 6. SG Level - Steam Generator 1A/1B/1C le 	sure is monitored by anel, and RCS wide - Pressurizer level is erature - RCS Loop ad cold leg essure is	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monit range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pres PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety cha range pressure for Loop 1/Loop 3. 3. Pressurizer Level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temp 1/Loop 2/Loop 3 temperature is monitored by loop hot ar RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pr monitored. 6. SG Level - Steam Generator 2A/2B/2C le 	sure is monitored by anel, RCS wide - Pressurizer level is erature - RCS Loop ad cold leg essure is	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power v diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 60 supplied by Train A/Train B distribution equipment. 3. 1 120 VAC power is supplied by Train A/Train B equipmer) V power is 25 VDC power and	
	 Unit 2: 1. Electrical power is supplied by off-site power v diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 60 supplied by Train A/Train B distribution equipment. 3. 1 120 VAC power is supplied by Train A/Train B equipmer) V power is 25 VDC power and	
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service service recirculating to the pond or Train A/Train B service with one service water pump in service recirculating to the essential turbine building loads isolated.	water is provided	
7.3 Vital Auxiliaries Component Coo	ling Water Train A/Train B component cooling water is provided with isolated.	non-essential loads	

Run: 08/18/2012 22:08 Page: 1145 of 2430



Fire Area ID:	1-095 - Aux Building Storage Room	
Compliance Basis:	NFPA 805. Section 4.2.3 Deterministic Approach	

Performance Goals

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-095 - Aux Building Storage Room Engineering Evaluation NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
,	 The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Run: 08/18/2012 22:08 Page: 1147 of 2430





Fire Area ID: Compliance Basis:		- Aux Building Storage Room 805, Section 4.2.3 Determinis		Required Fire Protection Systems and Features
Required FP System(s)/Fea	ature(s)	Description	Required By	Comments
Detection		1A-118	EEEE/LA	Required to support a fire boundary evaluation.
Water Suppression		1A-118	EEEE/LA	Required to support a fire boundary evaluation.

Fire Area ID: Compliance Basis:	1-095 - Aux Building Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
Δ CDF		
ΔLERF		
DID Maintained		
Safety Margin Maintained		
Comments		

Run: 08/18/2012 22:08 Page: 1149 of 2430





Fire Area ID:1-096 - Aux Building Combustible Storage RoomCompliance Basis:NFPA 805, Section 4.2.3 Deterministic Approach		Fire Area Definition
Fire Zone ID	Description	

0179 179 Combustible Storage Room

Fire Safety Analysis Data Manager (4.1)

	1-096 - Aux Building Combustible Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Tr	ip Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain S Conditions	ubcritical Subcritical conditions are maintained by isolating the VCT to preve dilution and by charging borated water from the RWST using Train pump, Train B charging pump or swing charging pump via Train A/ power.	A charging
3.1 RCS Inventory Control - RCS	Makeup RCS inventory is controlled using Train A charging pump, Train B o pump or swing charging pump via Train A/Train B power aligned to	
3.2 RCS Inventory Control - Isolat Paths	e Leakage Normal letdown is isolated using orifice isolation valves, a letdown valve, or a letdown path containment isolation valve. Excess letdow isolated using one or more excess letdown or containment isolation PZR PORV leakage paths are isolated using Train A PORV and Tr PORV. The RCS to RHR high/low pressure interface is isolated us Train A/Train B RHR inboard isolation valve and Train A/Train B R	wn is n valves. rain B ing the
3.3 RCS Inventory Control - RCP	Seal Integrity Maintain RCP Seal Integrity - RCP seal integrity is maintained by the RCPs, maintaining normal seal injection using Train A charging purp or swing charging purp via Train A/Train B power, preventing failure of the RCP thermal barriers. RCP seal injection preventing failure of the supply and discharge seal injection lines. RCP thermal barriers are isolated using containment isolation valve CCW to RCP thermal barrier isolation valve.	mp, Train B and paths are CCW to
4.1 RCS Pressure Control - Press	ure Transient Undesired depressurization due to inadvertent spray is prevented l ensuringauxiliary spray valve remains closed and the Loop 1 and L RCPs are shut off Undesired pressure increase is prevented by de all pressurizer heater groups.	Loop 2
4.2 RCS Pressure Control - Positi Control	ve Pressure Positive control of RCS pressure is accomplished with Train A POI PORV or aux spray for pressure reduction and Pressurizer Heater for pressure increase.	

Fire Area ID: Compliance Basis:	1-096 - Aux Building Combustible Storage Room NFPA 805, Section 4.2.3 Deterministic Approach	Performance Go
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using Train MDAFW, Train B MDAFW pump and TDAFW pump supplying Stean Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled co 	1
	 Unit 2: Decay heat removal during HSD is accomplished using Train MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled co 	,
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by sour range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is mon PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RC range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurize monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RC 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored 	tored by S wide r level is S Loop
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by sour range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is mon PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS w range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RC 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored 	tored by ide r level is S Loop
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/S diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC pov 120 VAC power is supplied by Train A/Train B equipment. 	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by sour range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is mon PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS w range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RC 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored 	itored by ide r level is S Loop
7.2 Vital Auxiliaries Service W	ater Train A/Train B service water is provided with two service water pump service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and n essential turbine building loads isolated.	vided

Fire Area ID: Compliance Basis:		Building Combustible Storage Room Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal		Method of Accomplishment	Comments	
7.3 Vital Auxiliaries Compo	nent Cooling Water	Train A/Train B component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries HVAC		Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.







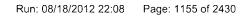
Fire Area ID: Compliance Basis:	1-096 - Aux Building Combustible Storage Room Engineering Evaluations NFPA 805, Section 4.2.3 Deterministic Approach Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	Νο
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
. · · ·	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

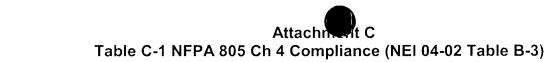
	1-096 - Aux Building Combustible St NFPA 805, Section 4.2.3 Determinis		Required Fire Protection Systems and Features
Required FP System(s)/Feature(s) Description	Required By	Comments
Detection	1A-118	EEEE/LA	Required to support a fire boundary evaluation.
Water Suppression	1A-118	EEEE/LA	Required to support a fire boundary evaluation.

Fire Safety Analysis Data Manager (4.1)









Fire Area ID: Compliance Basis:	1-097 - Filter Hatch Room & Combustible Storage Area NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID 0404	Description 404 Filter Hatch Room/Combustible Storage Area	
	, ,	

Run: 08/18/2012 22:08 Page: 1157 of 2430







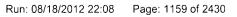




	Hatch Room & Combustible Storage Area ection 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuringauxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off.Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	

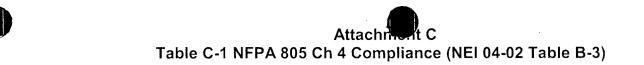
а.

Fire Area ID: Compliance Basis:	1-097 - Filter Hatch Room & Combustible Storage Area NFPA 805, Section 4.2.3 Deterministic Approach	Performance Go
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump and TDAFW pump supp Generator 1A/1B/1C. Main feed is isolated to prevent und 	blying Steam
	 Unit 2: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump, or TDAFW pump suppl Generator 2A/2B/2C. Main feed is isolated to prevent und 	ying Steam
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitor range detector Ch 2. 2. RCS Pressure - RCS pressure i narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, a range pressure for Loop 1/Loop 3. 3. Pressurizer Level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe 1/Loop 2/Loop 3 temperature is monitored by loop hot an RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pre monitored. 6. SG Level - Steam Generator 1A/1B/1C level 	s monitored by PZR and RCS wide - Pressurizer level is arature - RCS Loop d cold leg assure is
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitorange detector Ch 1/Ch 2. 2. RCS Pressure - RCS press PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety char range pressure for Loop 1/Loop 3. 3. Pressurizer Level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe 1/Loop 2/Loop 3 temperature is monitored by loop hot an RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C premonitored. 6. SG Level - Steam Generator 2A/2B/2C level 	sure is monitored by anel, RCS wide - Pressurizer level is erature - RCS Loop d cold leg essure is
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power v diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 supplied by Train A/Train B distribution equipment. 3. 1: 120 VAC power is supplied by Train A/Train B equipmen) V power is 25 VDC power and
	 Unit 2: 1. Electrical power is supplied by off-site power v diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 supplied by Train A/Train B distribution equipment. 3. 1: 120 VAC power is supplied by Train A/Train B equipmen) V power is 25 VDC power and
7.2 Vital Auxiliaries Service Wate	er Train A/Train B service water is provided with two service service recirculating to the pond or Train A/Train B service with one service water pump in service recirculating to the essential turbine building loads isolated.	water is provided
7.3 Vital Auxiliaries Component	Cooling Water Train A/Train B component cooling water is provided with r isolated.	non-essential loads



¢





Fire Area ID: Compliance Basis:	1-097 - Filter Hatch Room & Combustible Storage Area NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Safety Analysis Data Manager (4.1)

Page: 1160 of 2430

Run: 08/18/2012 22:08

Fire Area ID: Compliance Basis:	1-097 - Filter Hatch Room & Combustible Storage Area Engineering Evaluations NFPA 805, Section 4.2.3 Deterministic Approach Engineering Evaluations
Engineering Evaluation ID	SM-C051326701-006 Identify Regulatory Fire Barriers
Revision	3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	The fire areas, fire zones and rooms on both sides of the barrier were identified,
	• The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,
	 Elements with construction features equal to 3-hr boundaries were credited as such,

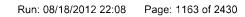
• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID: Compliance Basis:	1-097 - Filter Hatch Room & Combustible Storage Area NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
ΔCDF		
Δ LERF		
DID Maintained		
Safety Margin Maintained Comments		

•

Fire Area ID: Compliance Basis:	1-098 - Caskwash Storage & Combustible Storage Area NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definitio
Fire Zone ID 0447	Description 447 Caskwash Storage Area/Combustible Storage Area	

Fire Safety Analysis Data Manager (4.1)





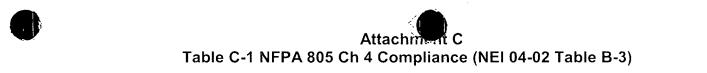


Fire Area ID: Compliance Basis:		ash Storage & Combustible Storage Area ction 4.2.3 Deterministic Approach		Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Rea	ctor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Mair Conditions	ntain Subcritical	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.		
3.1 RCS Inventory Control -	RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Paths	Isolate Leakage	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control -	RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control -	Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuringauxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off.Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Control	Positive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		

د

	98 - Caskwash Storage & Combustible Storage Area PA 805, Section 4.2.3 Deterministic Approach	·	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled coold 	down.	
	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled coold 	down.	
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitor PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer le monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS L 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored 	red by wide evel is Loop	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitor PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer le monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS L 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored 	red by e evel is Loop	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power 120 VAC power is supplied by Train A/Train B equipment. 		
	 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power 120 VAC power is supplied by Train A/Train B equipment. 		
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provid with one service water pump in service recirculating to the pond and non- essential turbine building loads isolated.	ded	
7.3 Vital Auxiliaries Component Coolir	ng Water Train A/Train B component cooling water is provided with non-essential k isolated.	oads	





Fire Area ID: Compliance Basis:	1-098 - Caskwash Storage & Combustible Storage Area NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-098 - Caskwash Storage & Combustible Storage Area Engineering Ev NFPA 805, Section 4.2.3 Deterministic Approach	aluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared ar such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines. Bases for Acceptability:	
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,	
	 The construction of the boundary and the potential issue with the element in guestion was described. 	

- The fire hazards and fire protection features on both sides of the barrier were described,
- Elements with construction features equal to 3-hr boundaries were credited as such,
- The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.



Farley



Fire Area ID: Compliance Basis:	1-098 - Caskwash Storage & Combustible Storage Area NFPA 805, Section 4.2.3 Deterministic Approach				Fire Risk Evaluation
Title Summary	N/A This fire area complies with the deterministic requirements	s of Section 4.2.3 of NFPA 805.	Therefore, a fire risk eva	luation is not required.	
Δ CDF Δ LERF					
A LERF DID Maintained Safety Margin Maintained Comments					
Fire Safety Analysis Data Mar	ager (4.1)	Farley		Run: 08/18/2012 22:08	Page: 1168 of 2430

Fire Area ID: Compliance Basis:	1-DU-DGRWIS-A - Diesel Building to RWIS NFPA 805, Section 4.2.3 Deterministic Appr	Ductbank, Unit 1, Train A roach	 Fire Area Definition
Fire Zone ID 1-DU-DGRWIS-A	Description Diesel Building to RWIS Ductbank, Unit 1, Train	A	
,			









.

Attachment C Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:		- Diesel Building to RWIS Ductbank, Unit 1, Train A n 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Μ	lethod of Accomplishment	Comments	
1 Primary Control Station	P	lant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor	Trip R	eactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintair Conditions	ct	ubcritical conditions are maintained by preventing boron dilution and by narging borated water from the RWST using Train A charging pump, Train B narging pump, or swing charging pump.		
3.1 RCS Inventory Control - RC		CS inventory is controlled using Train A charging pump, Train B charging ump, or swing charging pump aligned to the RWST.		
3.2 RCS Inventory Control - Iso Paths		lormal letdown is isolated using orifice isolation valves, letdown isolation alve or letdown path containment isolation valve. Excess letdown is isolated sing one or more excess letdown or containment isolation valves. PZR PORV eakage paths are isolated using Train A PORV and Train B PORV. The RCS or RHR high/low pressure interface is isolated using the Train A/Train B RHR uboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RC	R C C th a u	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all ICPs, maintaining normal seal injection using Train A charging pump, Train B harging pump, or swing charging pump, and preventing failure of the RCP hermal barriers. RCP seal injection paths are secured by isolating the supply nd discharge seal injection lines. CCW to RCP thermal barriers are isolated sing containment isolation valves or the CCW to RCP thermal barrier solation valve.		
4.1 RCS Pressure Control - Pre	e. R	Indesired depressurization due to inadvertent spray is prevented by nsuringauxiliary spray valve remains closed and the Loop 1 and Loop 2 CPs are shut off.Undesired pressure increase is prevented by deenergizing Il pressurizer heater groups.		
4.2 RCS Pressure Control - Pos Control	F 0	ositive control of RCS pressure is accomplished with Train A/Train B PORV raux spray for pressure reduction and Pressurizer Heater Group A/B for ressure increase.		
5 Decay Heat Removal		Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.		
		Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown.		
		, Farlari	Dum: 09/19/2012 22:09	Bogo: 1170 of 2420

,

•

	I-DU-DGRWIS-A - Diesel Building to RWIS Ductbank, Unit 1, Train A NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored pressure Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RC range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored 	ored by S wide level is S Loop	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. RCS Pressure - RCS pressure is monitored pressure for Loop 1/Loop 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. RCS Temperature - RCS 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. SG Level - Steam Generator 2A/2B/2C level is monitored. 	ored by de level is 3 Loop	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by diesel generator EDG1-2A/E 1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distril equipment. 3. 125 VDC power and 120 VAC power is supplied by Tr A/Train B equipment. 	bution	
	• Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/S diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC pow 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service water pumps service recirculating to the pond or Train A/Train B service water is pro- with one service water pump in service recirculating to the pond and no essential turbine building loads isolated.	vided	
7.3 Vital Auxiliaries Component Co	oling Water Train A/Train B component cooling water is provided with non-essentia isolated.	lloads	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room coo essential locations is provided with HVAC equipment corresponding to service water train.		





•





Fire Area ID:	1-DU-DGRWIS-A - Diesel Building to RWIS Ductbank, Unit 1, Train A	Performance Goals
Compliance Basis:	NFPA 805, Section 4.2.3 Deterministic Approach	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-DU-DGRWIS-A - Diesel Building to RWIS Ductbank, Unit 1, Train A Engineering Evalua NFPA 805, Section 4.2.3 Deterministic Approach Engineering Evalua
Engineering Evaluation ID	SM-C051326701-006 Identify Regulatory Fire Barriers
Revision	3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,
	• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.







Fire Area ID: Compliance Basis:	1-DU-DGRWIS-A - Diesel Building to RWIS Ductbank, Unit 1, Train A NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
∆ CDF	· ·	
∆ LERF		
DID Maintained		
Safety Margin Maintained		

Comments

Fire Area ID: Compliance Basis:	Area ID: 1-DU-DGRWIS-B - Diesel Building to RWIS Ductbank, Unit 1, Train B npliance Basis: NFPA 805, Section 4.2.3 Deterministic Approach	
Fire Zone ID 1-DU-DGRWIS-B	Description Diesel Building to RWIS Ductbank, Unit 1, Train B	
œ.		

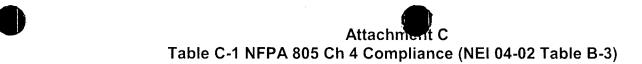


	S-B - Diesel Building to RWIS Ductbank, Unit 1, Train B ection 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuringauxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off.Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	

	DU-DGRWIS-B - Diesel Building to RWIS Ductbank, Unit 1, Train B FPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using MDAFW, Train B MDAFW pump and TDAFW pump supplying Generator 1A/1B/1C. Main feed is isolated to prevent uncontri- 	Steam	
	 Unit 2: Decay heat removal during HSD is accomplished using MDAFW, Train B MDAFW pump, or TDAFW pump supplying Generator 2A/2B/2C. Main feed is isolated to prevent uncontri- 	Steam	
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored I range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pre monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperatui 1/Loop 2/Loop 3 temperature is monitored by loop hot and co RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressur monitored. 6. SG Level - Steam Generator 1A/1B/1C level is 	is monitored by and RCS wide ssurizer level is re - RCS Loop d leg e is	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored l range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pre monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperatur 1/Loop 2/Loop 3 temperature is monitored by loop hot and co RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressur monitored. 6. SG Level - Steam Generator 2A/2B/2C level is 	is monitored by RCS wide ssurizer level is re - RCS Loop Id leg e is	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SL diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V posupplied by Train A/Train B distribution equipment. 3. 125 VI 120 VAC power is supplied by Train A/Train B equipment. 	oweris	
	 Unit 2: 1. Electrical power is supplied by off-site power via SU diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V presupplied by Train A/Train B distribution equipment. 3. 125 VI 120 VAC power is supplied by Train A/Train B equipment. 	ower is	•
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service water service recirculating to the pond or Train A/Train B service water with one service water pump in service recirculating to the pond essential turbine building loads isolated.	r is provided	
7.3 Vital Auxiliaries Component Coc	ling Water Train A/Train B component cooling water is provided with non-e isolated.	essential loads	

Fire Safety Analysis Data Manager (4.1)





Fire Area ID: Compliance Basis:	1-DU-DGRWIS-B - Diesel Building to RWIS Ductbank, Unit 1, Train B NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-DU-DGRWIS-B - Diesel Building to RWIS Ductbank, Unit 1, Train B NFPA 805, Section 4.2.3 Deterministic Approach	Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block bu such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there w rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensin	as not a documented/credited 3-hr
	Bases for Acceptability:	
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, 	
	 The construction of the boundary and the potential issue with the element in question was described, 	

• The fire hazards and fire protection features on both sides of the barrier were described,

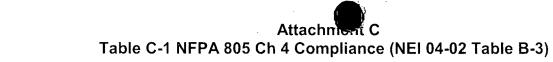
• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

.







Fire Area ID: Compliance Basis:	1-DU-DGRWIS-B - Diesel Building to RWIS Ductbank, Unit 1, Train B NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Fitle	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
1 CDF		
LERF		
DID Maintained		
Safety Margin Maintained		
Comments		

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID 1-DU-DGSWIS-A -U1	Description Diesel Building to SWIS Ductbank, Unit 1, Train A	

Run: 08/18/2012 22:08 Page: 1181 of 2430







	DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalu	Performance nation with simplifying deterministic assumptions	Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant, shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Sub Conditions	critical Subcritical conditions are maintained by isolating the VCT dilution and by charging borated water from the RWST usi pump or swing charging pump aligned to Train B power.		
3.1 RCS Inventory Control - RCS Ma	keup RCS inventory is controlled using Train B charging pump of pump via Train B power aligned to the RWST.	or swing charging	
3.2 RCS Inventory Control - Isolate L Paths	eakage Normal letdown is isolated using orifice isolation valves, le valve or letdown path containment isolation valve. Excess using one or more excess letdown or containment isolation leakage paths are isolated using Train A PORV and Train to RHR high/low pressure interface is isolated using the T inboard isolation valve and Train A/Train B RHR outboard	i letdown is isolated n valves. PZR PORV B PORV. The RCS rain A/Train B RHR	
3.3 RCS Inventory Control - RCP Se	al Integrity Maintain RCP Seal Integrity - RCP seal integrity is mainta RCPs, maintaining normal seal injection using Train B cha charging pump via Train B power, and preventing failure of barriers. RCP seal injection paths are secured by isolating discharge seal injection lines. CCW to RCP thermal barrier containment isolation valves or the CCW to RCP thermal valve.	rging pump or swing f the RCP thermal the supply and rs are isolated using	
4.1 RCS Pressure Control - Pressure	 Transient Undesired depressurization due to inadvertent spray is pronormal and auxiliary spray valves remain closed and the L RCPs are shut off. Undesired pressure increase is preven all pressurizer heater groups. 	oop 1 and Loop 2	
4.2 RCS Pressure Control - Positive Control	Pressure Positive control of RCS pressure is accomplished with Tra PORV or aux spray for pressure reduction and Pressurize for pressure increase.	in A PORV, Train B r Heater Group A/B	

.

	I-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with	simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train B MDA or TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is to prevent uncontrolled cooldown.	
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source rang detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored I narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wi pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RC 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored	by PZR de range lis IS Loop
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, generator EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train distribution equipment. 3. 125 VDC power and 120 VAC power is su Train A/Train B equipment.	n A/Train B
7.2 Vital Auxiliaries – Service Wate	Train B service water is provided with two service water pumps in se recirculating to the pond or Train B service water is provided with one water pump in service recirculating to the pond and non-essential tur building loads isolated.	e service
7.3 Vital Auxiliaries – Component (Water	Cooling Train B component cooling water is provided with non-essential load	s isolated.
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room cooling at locations is provided with HVAC equipment corresponding to the ser train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.







Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A Engineering Evaluations NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	Νο
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID:1Compliance Basis:N	I-DU-DGSWIS-A-U1 - Diesel Buildin NFPA 805, Section 4.2.4.2 Performa	g to SWIS Ductbank, Unit 1, Train A nce-Based Approach - Fire Risk Eva	A aluation with simplifying deterministic a	Required Fire Protection Sy assumptions	stems and Features
Required FP System(s)/Feature(s Modifications) Description	Required By DID Criteria	Comments Modification to provide Train B po temperature indication for Loop 2	ower to the temperature record when Train A power is not av	der to maintain RCS vailable.
Fire Safety Analysis Data Manager	r (4.1)	Farley		Run: 08/18/2012 22:08	Page: 1185 of 2430
	х <i>г</i>				

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 1-DU-DGSWIS-A-U1
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.

Comments

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-1-DU-DGSWIS-A-IA-001
VFDR	Q1B31V0061:OPEN/CLOSED:OPEN/CLOSED, PRESSURIZER PORV - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1B31V0061 - Pressurizer PORV. The normally closed PORV valve required to cycle to control RCS pressure transient. Fire induced damage to instrument air components may result in spuriously closing of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-DU-DGSWIS-A-SEP-001
VFDR	N1B21TI0410:AVAILABLE:AVAILABLE-HSP, RCS COLD LEG TEMPERATURE INDICATOR TI-410 - N1B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-DU-DGSWIS-A-SEP-002
VFDR	N1B21TI0413:AVAILABLE:AVAILABLE-HSP, RCS HOT LEG TEMPERATURE INDICATOR TI-413 - N1B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).

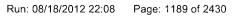




Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-1-DU-DGSWIS-A-SEP-003
VFDR	N1B21TR0410:AVAILABLE-TE420:AVAILABLE-TE420, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N1B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.
VFDR ID	U1-1-DU-DGSWIS-A-SEP-004
VFDR	N1B21TR0410:AVAILABLE-TE430:AVAILABLE-TE430, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N1B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.
VFDR ID	U1-1-DU-DGSWIS-A-SEP-005
VFDR	N1B21TR0413:AVAILABLE-TE423:AVAILABLE-TE423, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N1B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.

,

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A is: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-006		
VFDR	N1B21TR0413:AVAILABLE-TE433:AVAILABLE-TE433, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N1B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N1B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-007		
VFDR	N1C55NI0031B:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31B - N1C55NI0031B - Source Range Count Rate Indicator NI- 31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-008		
VFDR	N1C55NI0032B:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32B - N1C55NI0031B - Source Range Count Rate Indicator NI- 31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		



Fire Area ID: Compliance Basis:				
VFDR ID	U1-1-DU-DGSWIS-A-SEP-009	SWIS-A-SEP-009		
VFDR	Bus 1F. The pump is normally off, required off to preven signal and / or damage to sequencer may spuriously sta Nuclear Safety Performance Criteria. This condition repr	1P0001A:OFF:ON/OFF, 1A RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump; Q1R43E0001A - Sequencer F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS and / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO ar Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a ation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition		s evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that fense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-010			
VFDR	Bus 1F. The pump is normally off, required off to preven signal and / or damage to sequencer may spuriously sta Nuclear Safety Performance Criteria. This condition repr	01B:OFF:ON/OFF, 1B RHR/LHSI PUMP - Q1E11P0001A - 1A RHR/LPSI Pump; Q1E11P0001B - 1B RHR/LPSI Pump; Q1R43E0001A - Sequencer e pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO fety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition		his condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that pplicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-013			
VFDR	Q1E21P0002A:STANDBY:ON/OFF, 1A CHARGING/HHSI PUMP - Q1E21P0002A- 1A Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1R41L0001B - 125Vdc Distribution Panel 1B; Q1R43E0001A - Sequencer Bus 1F. The pump is normally in Standby, required off, required off; sequencer normally available, required available; an power supply normally energized, required energized, all required to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the p applicable risk, defense-in-depth, and safety margin crite	erformance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation ria were satisfied without further action.	determined that	
VFDR ID	U1-1-DU-DGSWIS-A-SEP-014			
Fire Safety Analysis Data N	Manager (4,1)	Farley Run: 08/18/2012 2	2:08 Page: 1190 of 2430	

.

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A VFDRs NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q1E21P0002B:STANDBY:ON/OFF-TRAIN A, 1B CHARGING/HHSI PUMP - Q1E21P0002A- 1A Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1R41L0001B - 125Vdc Distribution Panel 1B; Q1R43E0001A - Sequencer Bus 1F. The pump is normally in Standby, required off, required off; sequencer normally available, required available; an power supply normally energized, required energized, all required to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-015		
VFDR	Q1E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - Q1E21V0016A - HHSI to RCS Cold Leg Isolation. The valve is normally closed, required closed to prevent charging pump run out. Fire induced damage may generate a SIAS to cause a failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition .	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-016		
VFDR	Q1E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q1E21V0257 - Charging Pumps to Regen HX. The valve is normally open, required to open to maintain RCS inventory. Fire induced damage to cascading power supply to instruments cabinets (SIAS) may spuriously operate valve after battery depletion or after battery fails due to environmental concerns preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-018		
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:08 Page: 1191 of 243		



Fire Area ID: compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A s: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q1E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Q1E21V0347 - Charging Flow Control Valve. The valve is normally throttled, required to throttle to maintain RCS inventory. Fire induced damage due to instrument air components and cascading power supply failure prevent ability to maintain reactivity and inventory control, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-019		
VFDR	Q1E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q1E21V0376A - VCT Outlet Isolation; Q1E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced damage to instruments cabinets power supplies generate SIAS after battery depletion or environmental failure can spuriously operate valves to cause failure of charging pump, and a challenge to the RCS inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-020		
VFDR	Q1E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q1E21V0376A - VCT Outlet Isolation; Q1E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced damage to instruments cabinets power supplies generate SIAS after battery depletion or environmental failure can spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-021		

Fire Safety Analysis Data Manager (4.1)

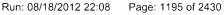
Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A asis: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q1N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q1N11PV3371A - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components failure and cascading power supplies prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-022		
VFDR	Q1N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q1N11PV3371B - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components failure and cascading power supplies prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-023		
VFDR	Q1N11PV3371C:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q1N11PV3371C - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components failure and cascading power supplies prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-024		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1193 of 2430

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q1N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - Q1N12V0001A - TDAFP Steam Supply Isolation Valve HV3235A. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage may prevent the ability to turn pump off, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-025		
VFDR	Q1N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - Q1N12V0001B - TDAFP Steam Supply Isolation Valve HV3235B. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage may prevent the ability to turn pump off, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-026		
VFDR	Q1N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1A - Q1N23HV3228A - TDAFW Supply to Steam Generator 1A. The valve is normally open, required to be throttled to control TDAFW to Steam Generator. Fire induced damage from instrument air component failures, cascading powe supply failures and spurious actuation signals may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	• This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-027		

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q1N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1B - Q1N23HV3228B - TDAFW Supply to Steam Generator 1B. The valv is normally open, required to be throttled to control TDAFW to Steam Generator. Fire induced damage from instrument air component failures, cascading pow supply failures and spurious actuation signals may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-028		
VFDR	Q1N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1C - Q1N23HV3228C - TDAFW Supply to Steam Generator 1C. The value is normally open, required to be throttled to control TDAFW to Steam Generator. Fire induced damage from instrument air component failures, cascading pow supply failures and spurious actuation signals may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-029		
VFDR	Q1R21L0001A:ENERGIZED:ENERGIZED, 120V VITAL AC INSTRUMENTATION PANEL 1A - N1C55NI0031B - Source Range Count Rate Indicator NI-31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-030		
Fire Safety Analysis Data M	Manager (4.1) Farley Run: 08/18/2012 22:08 Page: 1195 of 2		



Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train A VF NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q1R21L0001B:ENERGIZED:ENERGIZED, 120V VITAL AC INSTRUMENTATION PANEL 1B - N1C55NI0031B - Source Range Count Rate Indicator NI-31B and Q1R21L0001A - 120V Vital AC Instrument Panel 1A; N1C55NI0032B - Source Range Count Rate Indicator NI-32B and Q1R21L0001B - 120V Vital AC Instrument Panel 1B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-031		
VFDR	Q1R41L0001B:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 1B - Q1E21P0002A- 1A Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1R41L0001B - 125Vdc Distribution Panel 1B; Q1R43E0001A - Sequencer Bus 1F. The pump is normally in Standby, required off, required off; sequencer normally available, required available; power supply normally energized, required energized, all required to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-032		
VFDR	Q1R43E0001A:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 1F - Q1E21P0002A- 1A Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1E21P0002B - 1B Charging/HHSI Pump; Q1R41L0001B - 125Vdc Distribution Panel 1B; Q1R43E0001A - Sequencer Bus 1F. The pump is normally in Standby, required off, required off; sequencer normally available, required available; power supply normally energized, required energized, all required to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGSWIS-A-SEP-033		
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:08 Page: 1196 of 243		

Fire Area ID: Compliance Basis:	ompliance Basis: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	





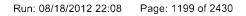


Fire Area ID: 1-DU-DGSWIS-A-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train A Compliance Basis: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assump		Fire Area Definition
Fire Zone ID	Description	

1-DU-DGSWIS-A Diesel Building to SWIS Ductbank, Unit 1, Train A -U2

>

	IS-A-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train A ection 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	g deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump aligned to Train B power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train B charging pumpor swing charging pump via Train B power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	,
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transien	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	









Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train A Basis: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train B MDAFW or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is iso to prevent uncontrolled cooldown.		
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide rang pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS L 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C level is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored.	je Loop	
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, die generator EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/ distribution equipment. 3. 125 VDC power and 120 VAC power is supp Train A/Train B equipment.	/Train B	
7.2 Vital Auxiliaries – Service Wa	Train B service water is provided with two service water pumps in servic recirculating to the pond or Train B service water is provided with one se water pump in service recirculating to the pond and non-essential turbin building loads isolated.	ervice	
7.3 Vital Auxiliaries – Componer Water	t Cooling Train B component cooling water is provided with non-essential loads is	solated.	
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room cooling at es locations is provided with performance-based approach HVAC equipme corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train A Engineering Evaluations NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID	SM-C051326701-006 Identify Regulatory Fire Barriers
Revision	3
Inactive	No
Functionally Equivalent	Νο
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
•	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

.

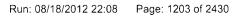






Fire Area ID: Compliance Basis:		Building to SWIS Ductbank, Unit 1, Trair erformance-Based Approach - Fire Risk E	A Required Fire Protection Systems and Features Evaluation with simplifying deterministic assumptions
Required FP System(s)/Feature	re(s) Description	Required By	Comments
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to mee risk criteria.

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train A NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 1-DU-DGSWIS-A-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	
Δ LERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	







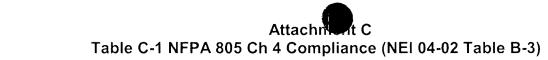
Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train A VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-1-DU-DGSWIS-A-HVAC-001
VFDR	Q2R42B0001A:ENERGIZED:ENERGIZED-BC2A, 125V DC BUS 2A - This component, 125V DC Bus 2A, requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component challenges HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	•This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.
VFDR ID	U2-1-DU-DGSWIS-A-HVAC-002
VFDR	Q2R15A0006:ENERGIZED:ENERGIZED-EDG1-2A, 4160V SWITCHGEAR BUS 2F - This component, Switchgear 2F, requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component challenges HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-1-DU-DGSWIS-A-HVAC-003
VFDR	Q2R17B0001:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2A - This component, MCC 2A, requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component challenges HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-1-DU-DGSWIS-A-HVAC-004

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-A-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train A VF NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	FDRs
VFDR	Q2R42E0002A:AVAILABLE:AVAILABLE, 125V BATTERY 2A - This component, Train A Battery, requires HVAC support to remain functional. Failure to provid HVAC support to this electrical component challenges HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a varianc from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	ce
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1205 of 2430

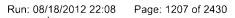




Fire Area ID: Compliance Basis:	1-DU-DGSWIS-B-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
1-DU-DGSWIS-B -U1	Diesel Building to SWIS Ductbank, Unit 1, Train B	

Fire Safety Analysis Data Manager (4.1)

	S-B-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train B ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump aligned to Train A power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	













	1-DU-DGSWIS-B-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplify	SWIS-B-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train B 5, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MDAFW pur or TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolate to prevent uncontrolled cooldown.		
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2, 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide rang pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored.	je	
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Train A/Tra B distribution equipment. 3. 125 VDC power and 120 VAC power is supplie by Train A/Train B equipment.		
7.2 Vital Auxiliaries – Service Wat	er Train A service water is provided with two service water pumps in service recirculating to the pond or Train A service water is provided with one servic water pump in service recirculating to the pond and non-essential turbine building loads isolated.	e	
7.3 Vital Auxiliaries – Component Water	Cooling Train A component cooling water is provided with non-essential loads isolate	ed.	
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling a essential locations is provided with performance-based approach HVAC equipment corresponding to the service water train.	at	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-B-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train B Engineering Evaluation NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.







Fire Area ID: Compliance Basis:		Building to SWIS Ductbank, Unit 1, Trai fformance-Based Approach - Fire Risk t	n B Required Fire Protection Systems and Features Evaluation with simplifying deterministic assumptions
Required FP System(s)/Feature(s) Description	Required By	Comments
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to meet risk criteria.

.

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-B-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train B Fire Risk Evaluation NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Fire Risk Evaluation
Title	FRE for Fire Area 1-DU-DGSWIS-B-U1
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
Δ LERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	



Fire Area ID: Compliance Basis:	1-DU-DGSWIS-B-U1 - Diesel Building to SWIS Ductbank, Unit 1, Train B VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U1-1-DU-DGSWIS-B-HVAC-001		
VFDR	Q1R15A0007:ENERGIZED:ENERGIZED-EDG1B, 4160V SWITCHGEAR BUS 1G - This component, Switchgear 1G (600V Load Center E Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-DU-DGSWIS-B-HVAC-002		
VFDR	Q1R42B0001B:ENERGIZED:ENERGIZED-BC1B, 125V DC BUS 1B - This component, 125V DC Bus 1B, requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.		
VFDR ID	U1-1-DU-DGSWIS-B-HVAC-003		
VFDR	Q1R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 1B - This component, Battery 1B (Train B Battery Room Exhaust Fan), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-B-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
1-DU-DGSWIS-B -U2	Diesel Building to SWIS Ductbank, Unit 1, Train B	

Fire Safety Analysis Data Manager (4.1)







	SWIS-B-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train B 5, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sig	Performance Goal implifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritica Conditions	Subcritical conditions are maintained by isolating the VCT to prevent be dilution and by charging borated water from the RWST using Train A cl pump or swing charging pump aligned to Train A power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing char pump via Train A power aligned to the RWST.	arging
3.2 RCS Inventory Control - Isolate Leakag Paths	e Normal letdown is isolated using orifice isolation valves, letdown isolati valve or letdown path containment isolation valve. Excess letdown is is using one or more excess letdown or containment isolation valves. PZF leakage paths are isolated using Train A PORV and Train B PORV. Th to RHR high/low pressure interface is isolated using the Train A/Train E inboard isolation valve and Train A/Train B RHR outboard isolation valve.	solated /R PORV he RCS B RHR
3.3 RCS Inventory Control - RCP Seal Inte	grity Maintain RCP Seal Integrity - RCP seal integrity is maintained by trippi RCPs, maintaining normal seal injection using Train A charging pump of charging pump via Train A power, and preventing failure of the RCP the barriers. RCP seal injection paths are secured by isolating the supply a discharge seal injection lines. CCW to RCP thermal barriers are isolate containment isolation valves or the CCW to RCP thermal barrier isolati valve.	or swing nermal and ed using
4.1 RCS Pressure Control - Pressure Tran	sient Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loo RCPs are shut off. Undesired pressure increase is prevented by deen all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Press Control	Positive control of RCS pressure is accomplished with Train A/Train B or aux spray for pressure reduction and Pressurizer Heater Group A/B pressure increase.	

DU-DGSWIS-B-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train B FPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation	with simplifying deterministic assumptions
Method of Accomplishment	Comments
detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monil narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS w pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure	ored by PZR ide range level is - RCS Loop leg is
generator EDG1-2A. 2.4.16 kV and 600 V power is supplied b	y Train A/Train
recirculating to the pond or Train A service water is provided wi	th one service
ooling Train A component cooling water is provided with non-essentia	loads isolated.
	 FPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation Method of Accomplishment Decay heat removal during HSD is accomplished using Train A or TDAFW pump supplying Steam Generator2A/2B/2C. Main fe to prevent uncontrolled cooldown. 1. Shutdown Margin - Shutdown margin is monitored by source detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monit narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS w pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure monitored. 6. SG Level - Steam Generator 2A/2B/2C level is n 1. Electrical power is supplied by off-site power via SUT 1A/SU generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by B distribution equipment. Train A service water is provided with two service water pumps recirculating to the pond or Train A service water is provided with an non-essent building loads isolated. Train A component cooling water is provided with non-essential locations is provided with HVAC equipment correspore

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Run: 08/18/2012 22:08 Page: 1215 of 2430







Fire Area ID: Compliance Basis:	1-DU-DGSWIS-B-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train B NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID: Compliance Basis:	1-DU-DGSWIS-B-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train B Fire Risk Evaluation NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Fire Risk Evaluation
Title	FRE for Fire Area 1-DU-DGSWIS-B-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	



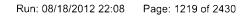


Fire Area ID: Compliance Basis:	1-DU-DGSWIS-B-U2 - Diesel Building to SWIS Ductbank, Unit 1, Train B VFDRs NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-1-DU-DGSWIS-B-SEP-001
VFDR	Q2P16V0538:CLOSED:OPEN, SW RECIRC TO POND TRAIN B - Recirculation to the pond is the credited lineup for Service Water. Valve Q2P16V0539 must open in order to establish recirculation. Fire induced control circuit damage could render the component inoperable or result in spurious closure of the valve. Failure to ensure availability of this valve challenges the establishment of Service Water and Train B Power. This failure challenges service water support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	1-DU-DGVB-A - Diesel Building to Valve Box Ductbanks, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID 1-DU-DGVB-A	Description Diesel Building to Valve Box Ductbanks, Train A	

.



Compliance Basis:	Unit 1: NFPA 8	- Diesel Building to Valve Box Ductbanks, Train A 305, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with si 305, Section 4.2.3 Deterministic Approach	mplifying deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Tri	ip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain St Conditions	ubcritical	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.	,	
3.1 RCS Inventory Control - RCS N	Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST		
3.2 RCS Inventory Control - Isolate Paths	e Leakage	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP S	Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	3	
4.1 RCS Pressure Control - Press	ure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.]	

Compliance Basis: Unit	U-DGVB-A - Diesel Building to Valve Box Ductbanks, Train A 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalua 2: NFPA 805, Section 4.2.3 Deterministic Approach	ation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
4.2 RCS Pressure Control - Positive P Control	ressure Positive control of RCS pressure is accomplished with Train A PO PORV or aux spray for pressure reduction and Pressurizer Heater for pressure increase.	
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using T MDAFW, Train B MDAFW pump and TDAFW pump supplying SI Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolle 	team
	 Unit 2: Decay heat removal during HSD is accomplished using T MDAFW, Train B MDAFW pump, or TDAFW pump supplying Ste Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolle 	am
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is r PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressu monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold le RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is moni- 	nonitored by d RCS wide urizer level is RCS Loop eg
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by a range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is r PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RC range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressumonitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold le RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C level is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 	nonitored by S wide urizer level is RCS Loop eg s
7.1 Vital Auxiliaries – Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power supplied by Train A/Train B distribution equipment. 3. 125 VDC 120 VAC power is supplied by Train A/Train B equipment. 	eris
	• Unit 2: 1. Electrical power is supplied by off-site power via SUT 2 diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V powe supplied by Train A/Train B distribution equipment. 3. 125 VDC 120 VAC power is supplied by Train A/Train B equipment.	eris

Fire Safety Analysis Data Manager (4.1)

Unit 1: NFP/	A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim	plifying deterministic assumptions	Performance Goals
	Method of Accomplishment	Comments	
Water	• Unit 1: Performance-based approach Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or performance-based approach Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
	 Unit 2: Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 		
ent Cooling	Train A/Train B component cooling water is provided with non-essential loads isolated.		
	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.	• •	
	Unit 1: NFP/ Unit 2: NFP/ Vater	Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach Method of Accomplishment Vater Unit 1: Performance-based approach Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or performance-based approach Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non- essential turbine building loads isolated. Unit 2: Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. Ent Cooling Train A/Train B component cooling water is provided with non-essential loads isolated. Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the	Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach Method of Accomplishment Comments Vater • Unit 1: Performance-based approach Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or performance-based approach Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non- essential turbine building loads isolated. • Unit 2: Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. ent Cooling Train A/Train B component cooling water is provided with non-essential loads isolated. Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-DU-DGVB-A - Diesel Building to Valve Box Ductbanks, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	ns
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes ·	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	

• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.



١

Fire Area ID: Compliance Basis:	1-DU-DGVB-A - Diesel Building to Valve Box Ductbanks, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 1-DU-DGVB-A
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	
Δ LERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

-

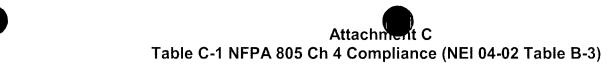
Fire Area ID: Compliance Basis:	1-DU-DGVB-A - Diesel Building to Valve Box Ductbanks, Train A VFDRs Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID	U1-1-DU-DGVB-A-SEP-001	
VFDR	Q1P16V0539:CLOSED:OPEN, TRAIN A SW EMERGENCY RECIRC TO POND - The pond is the credited source of recirculation for Service Water. It is therefore desired, that valve Q1P16V0539 (SW Emergence Recirculation to Pond) open in order to establish a recirculation lineup. Fire induced control circuit damage could render to component inoperable from the control and/or result in spurious operation. Failure to establish recirculation to the pond challenges various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-DU-DGVB-A-SEP-002	
VFDR	Q1P16V0546:OPEN:OPEN/CLOSED, TRAIN A SW DISCHARGE TO RIVER - The pond is the credited source of recirculation for Service Water. The River supply is not credited, and thus, must be isolated. However, before the Pond lineup is established, the SW Discharge Valve (Q1P16V0546) must remain open. It is then desired that the valve close in order to maintain an adequate pond recirculation lineup. Fire induced damage to the control circuit of this valve may result in a loss of control room ability to operate the valve and/or spurious operation. This failure prevents the establishment of Service water discharge to the pond, and poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

.



Farley





Fire Area ID: Compliance Basis:	1-DU-DGVB-B - Diesel Building to Valve Box Ductbanks, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
	Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	

Fire Zone ID Description

1-DU-DGVB-B Diesel Building to Valve Box Ductbanks, Train B

Compliance Basis: U	DU-DGVB-B - Diesel Building to Valve Box Ductbanks, Train B nit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fir nit 2: NFPA 805, Section 4.2.3 Deterministic Approach	e Risk Evaluation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Su Conditions	bcritical Subcritical conditions are maintained by isolating the dilution and by charging borated water from the RWS pump, Train B charging pump or swing charging pump power.	T using Train A charging
3.1 RCS Inventory Control - RCS M	akeup RCS inventory is controlled using Train A charging pu pump or swing charging pump via Train A/Train B pov	
3.2 RCS Inventory Control - Isolate Paths	Leakage Normal letdown is isolated using orifice isolation valve, valve, or a letdown path containment isolation valve. I isolated using one or more excess letdown or contain PZR PORV leakage paths are isolated using Train A PORV. The RCS to RHR high/low pressure interface Train A/Train B RHR inboard isolation valve and Trair outboard isolation valve.	Excess letdown is ment isolation valves. PORV and Train B is isolated using the
3.3 RCS Inventory Control - RCP S	eal Integrity Maintain RCP Seal Integrity - RCP seal integrity is ma RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A/T preventing failure of the RCP thermal barriers. RCP s secured by isolating the supply and discharge seal inj RCP thermal barriers are isolated using containment CCW to RCP thermal barrier isolation valve.	A charging pump, Train B rain B power, and eal injection paths are ection lines. CCW to
4.1 RCS Pressure Control - Pressu	e Transient Undesired depressurization due to inadvertent spray a auxiliary spray valve remains closed and the Loop 1 a shut off. Undesired pressure increase is prevented b pressurizer heater groups.	and Loop 2 RCPs are





Fire Area ID: Compliance Basis:	Unit 1: NFPA	B - Diesel Building to Valve Box Ductbanks, Train B 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 805, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
4.2 RCS Pressure Control - Po Control	sitive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal		 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
		 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 		
6 Process Monitoring		 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 		
		 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 		
7.1 Vital Auxiliaries – Electrical		• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
		 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 		

Run: 08/18/2012 22:08 Page: 1228 of 2430

Fire Area ID: Compliance Basis:	1-DU-DGVB-B - Diesel Building to Valve Box Ductbanks, Train Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approac Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	B Performance Goals h - Fire Risk Evaluation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
7.2 Vital Auxiliaries – Service Wa	 • Unit 1: Performance-based approach Train A/ provided with two service water pumps in serv performanced-based approach Train A/Train one service water pump in service recirculatin essential turbine building loads isolated. 	ice recirculating to the pond or 3 service water is provided with
	 Unit 2: Train A/Train B service water is provid pumps in service recirculating to the pond or provided with one service water pump in servi and non-essential turbine building loads isolat 	Frain A/Train B service water is ce recirculating to the pond
7.3 Vital Auxiliaries - Componer Water	t Cooling Train A/Train B component cooling water is pro isolated.	vided with non-essential loads
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A/Tr essential locations is provided with HVAC equip service water train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.







Fire Area ID: Compliance Basis:	1-DU-DGVB-B - Diesel Building to Valve Box Ductbanks, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No .	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	The fire areas, fire zones and rooms on both sides of the barrier were identified,	

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID: Compliance Basis:	1-DU-DGVB-B - Diesel Building to Valve Box Ductbanks, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
Title	FRE for Fire Area 1-DU-DGVB-B	
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined the applicable risk, defense-in-depth, and safety margin criteria were satisfied.	
ΔCDF		
ΔLERF		
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.	
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.	
Comments		

Fire Area ID: Compliance Basis:	1-DU-DGVB-B - Diesel Building to Valve Box Ductbanks, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR ID	U1-1-DU-DGVB-B-SEP-001		
VFDR	Q1P16V0538:CLOSED:OPEN, TRAIN B SW EMERGENCY RECIRC TO POND - Fire damage to the control circuit of this valve could prevent the establishment of Train B Service Water pond recirculation. This poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-1-DU-DGVB-B-SEP-002		
VFDR	Q1P16V0545:OPEN:OPEN/CLOSED, TRAIN B SW DISCHARGE TO RIVER - Fire damage to the control circuit of this valve could prevent the establishment Train B Service Water Discharge to the river. This poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		

.

Fire Area ID: Compliance Basis:	1-EMBED-AB - Aux Building Embedded Conduit NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definitio
Fire Zone ID 1-EMBED-AB	Description Embedded Conduit, Auxiliary Building, Unit 1	
	· · · · · · · · · · · · · · · · · · ·	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1233 of 2430



	AB - Aux Building Embedded Conduit Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.	· · · · · · · · · · · · · · · · · · ·
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integri	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transie	^{nt} Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off.Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	

	1-EMBED-AB - Aux Building Embedded Conduit NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump and TDAFW pump sup Generator 1B/1C. Main feed is isolated to prevent uncon 	plying Steam	
	 Unit 2: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump, or TDAFW pump supp Generator 2A/2B/2C. Main feed is isolated to prevent un 	lying Steam	
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is moniterange detector Ch 1/Ch 2. 2. RCS Pressure - RCS press PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety chair range pressure for Loop 1/Loop 3. 3. Pressurizer Level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe 2/Loop 3 temperature is monitored by loop hot and cold Pressure - Steam Generator 1A/1B/1C pressure is monitored. 	sure is monitored by nnel, and RCS wide - Pressurizer level is erature - RCS Loop eg RTDs. 5. SG	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monity range detector Ch 1/Ch 2. 2. RCS Pressure - RCS press PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety char range pressure for Loop 1/Loop 3. 3. Pressurizer Level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temp 1/Loop 2/Loop 3 temperature is monitored by loop hot ar RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pr monitored. 6. SG Level - Steam Generator 2A/2B/2C le 	sure is monitored by nnel, RCS wide - Pressurizer level is erature - RCS Loop nd cold leg essure is	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power v diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 supplied by Train A/Train B distribution equipment. 3. 1 120 VAC power is supplied by Train A/Train B equipment) V power is 25 VDC power and	
	 Unit 2: 1. Electrical power is supplied by off-site power v diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 supplied by Train A/Train B distribution equipment. 3. 1 120 VAC power is supplied by Train A/Train B equipment) V power is 25 VDC power and	
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service service recirculating to the pond or Train A/Train B service with one service water pump in service recirculating to the essential turbine building loads isolated.	water is provided	
7.3 Vital Auxiliaries Component C	ooling Water Train A/Train B component cooling water is provided with isolated.	non-essential loads	



Fire Area ID: Compliance Basis:	1-EMBED-AB - Aux Building Embedded Conduit NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

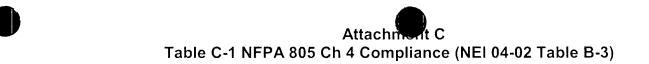
Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained in this area due to embedded conduits. Cables in embedded conduits are protected from adverse conditions occurring due to fire suppression effects. Therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-EMBED-AB - Aux Building Embedded Conduit NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation	
Title Summary	N/A This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.		
Δ CDF Δ LERF			
DID Maintained Safety Margin Maintained Comments			
Fire Safety Analysis Data Mana	ger (4.1) Farley Run: 08/18/2012 22:08	Page: 1237 of 2430	



)



Fire Area ID: Compliance Basis:	1-S01 - Stairwell No. 1 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
1-S01	Stairwell No. 1	

.

1

Compliance Basis:		I No. 1 5, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 5, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station	ł	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Tri	p	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Su Conditions		Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.		
3.1 RCS Inventory Control - RCS M		RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Paths		Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP S		Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressu		Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		







Fire Area ID: Compliance Basis:		vell No. 1 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 805, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
4.2 RCS Pressure Control - Po Control	sitive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal		 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
		 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 		
6 Process Monitoring		 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 		
	· ·	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 		
7.1 Vital Auxiliaries – Electrica		• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
		 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 		

Fire Safety Analysis Data Manager (4.1)

.

Run: 08/18/2012 22:08 Page: 1240 of 2430

.

Fire Area ID: 1-S01 - Stairwell No. 1 Compliance Basis: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying de Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		plifying deterministic assumptions	Performance Goals	
Performance Goal		Method of Accomplishment	Comments	`
7.2 Vital Auxiliaries – Servi	ice Water	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Com Water	ponent Cooling	Train A/Train B component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVAC		Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Safety Analysis Data Manager (4.1)



Attachment C

Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	1-S01 - Stairwell No. 1 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Engineering Evaluations
Engineering Evaluation ID Revision	ENGDOC, SM-97-1561-001 Fire Barrier Penetration Seal Limiting Design Parameter Evaluation	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	Evaluate various penetration seals which, as a result of plant walkdowns of as built configurations, exhibited one or more Limiting Desig which were outside limits previously established via qualification test reviews.	gn Parameters (LDPs)
	Bases for Acceptability:	
	The basis of the evaluation was to establish the acceptability of the field established configurations through either:	
	 Utilizing engineering judgment based on additional reviews of test reports to justify the LDP in question; Refinement of field judgments through review of design drawing/documentation; or Establishing additional technical bases which allowed reapplication of acceptance criteria for LDPs. 	
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as we such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a docun rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described, 	

Fire Safety Analysis Data Manager (4.1)

Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	
Elements with construction features equal to 3-hr boundaries were credited as such, The suclustion demonstrates that elements with construction features not equivalent to 2 he rated boundaries are adapted for the b	honord
• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the h	hazard.
	Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach Elements with construction features equal to 3-hr boundaries were credited as such,

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:08 Page: 1243 of 2430





Fire Area ID: Compliance Basis:	Unit 1	- Stairwell No. 1 : NFPA 805, Section 4.2.4.2 Performar : NFPA 805, Section 4.2.3 Deterministi	nce-Based Approach - Fire c Approach	Required Fire Protection Systems and Featur Risk Evaluation with simplifying deterministic assumptions
Required FP System(s)/Feat Detection Passive	ure(s)	Description 1A-51 Restricted transient controls	Required By EEEE/LA EEEE/LA	Comments Required to support a fire boundary evaluation. Required to support a fire boundary evaluation.
				· · · · · · · · · · · · · · · · · · ·

	Table C-1 NFPA	Attachment C 805 Ch 4 Compliance (NEI 04-02 Ta	able B-3)
Fire Area ID: Compliance Basis:	1-S01 - Stairwell No. 1 Unit 1: NFPA 805, Section 4.2.4.2 Perfc Unit 2: NFPA 805, Section 4.2.3 Determ	ormance-Based Approach - Fire Risk Evaluation with simp ninistic Approach	Fire Risk Evaluation
Title	FRE for Fire Area 1-S01		
Summary	NFPA 805 Section 4.2.3. The acceptable		is the variances from the deterministic requirements (VFDRs) of CDF and LERF and the maintenance of defense in depth and iety margin criteria were satisfied.
ΔCDF			
ΔLERF			
DID Maintained		eatures were identified ensuring an adequate balance of I) were evaluated to identify general DID echelon imbalances. DID features is maintained for the Fire Area. As a result of the
Safety Margin Maintained		R, supporting analyses) have been considered and provid	ccepted standards. In addition, safety analysis acceptance des sufficient margin to account for analysis and data
Comments			
			·
Fire Safety Analysis Data Mar		Farley	Run: 08/18/2012 22:08 Page: 1245 of 2430

•



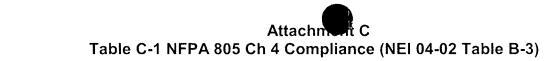
Fire Area ID: Compliance Basis:	1-S01 - Stairwell No. 1 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-S01-SEP-001
VFDR	Q1N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The main, steam atmospheric relief valves are initially required closed in order to prevent uncontrolled Steam Generator De-pressurization. Fire induced cable damage to the MSARV control circuit 3371A, may result in spurious opening of the valve, and could result in rapid Steam Generator De-Pressurization . This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-S01-SEP-002
VFDR	Q1N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The main, steam atmospheric relief valves are initially required closed in order to prevent uncontrolled Steam Generator De-pressurization. Fire induced cable damage to the MSARV control circuit 3371B, may result in spurious opening of the valve, and could result in rapid Steam Generator De-Pressurization. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-S01-SEP-003
VFDR	Q1N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Decay Heat Removal via SG 1B is desired in this fire area. The main, steam atmospheric relief valves are required to modulate in order to provide steam relief to the atmosphere. Fire induced cable damage to the MSARV control circuit 3371B associated with SG 1B, may result in spurious closure of the valve, thus isolating the secondary side, or spurious full opening of the valve leading to an uncontrolled SG de-pressurization condition. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

,

Fire Area ID: Compliance Basis:	1-S01 - Stairwell No. 1 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-S01-SEP-004
VFDR	Q1N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The main, steam atmospheric relief valves are initially required closed in order to prevent uncontrolled Steam Generator De-pressurization. Fire induced cable damage to the MSARV control circuit 3371C, may result in spurious opening of the valve, and could result in rapid Steam Generator De-Pressurization. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Run: 08/18/2012 22:08 Page: 1247 of 2430





Fire Area ID: Compliance Basis:	1-S02 - Stairwell No. 2 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
1-S02	Stairwell No. 2	

.

.

	ell No. 2 305, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 305, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	 Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump aligned to Train A power. 		
	 Unit 2: Subcritical conditions are maintained by preventing boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump, or swing charging pump. 		
3.1 RCS Inventory Control - RCS Makeup	 Unit 1: RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST. 		
	 Unit 2: RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump aligned to the RWST. 		
3.2 RCS Inventory Control - Isolate Leakage Paths	 Unit 1: Normal letdown is isolated using orifice isolation, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve. 		
	• Unit 2: Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity	• Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier.		
	Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by		
Fire Safety Analysis Data Manager (4.1)	Farley	Run: 08/18/2012 22:0	8 Page: 1249 of 2430

Fire Area ID: Compliance Basis:		No. 2 5, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 5, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal	٩	Method of Accomplishment	Comments	
		tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Press	r F	Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positi Control	ive Pressure	 Unit 1: Positive control of RCS pressure is accomplished with Train A PORV for pressure reduction and Pressurizer Heater Group A/B for pressure increase. 		
	•	• Unit 2: Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal		 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump or TDAFW pump supplying Steam Generator 1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
	•	• Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown.		
6 Process Monitoring		• Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored.		
		• Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is		

Compliance Basis:	-S02 - Stairwell No. 2 nit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Eva nit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goa aluation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
	monitored. 6. SG Level - Steam Generator 2A/2B/2C level is	monitored.
7.1 Vital Auxiliaries – Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SU diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is su A/Train B distribution equipment. 3. 125 VDC power and 120 supplied by Train A/Train B equipment. 	pplied by Train
	 Unit 2: 1. Electrical power is supplied by off-site power via SL diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V posupplied by Train A/Train B distribution equipment. 3. 125 VI 120 VAC power is supplied by Train A/Train B equipment. 	ower is
7.2 Vital Auxiliaries – Service Wate	 Unit 1: Train A service water is provided with two service water service recirculating to the pond or Train A service water is pro- service water pump in service recirculating to the pond and no turbine building loads isolated. 	ovided with one
	 Unit 2: Train A/Train B service water is provided with two serv pumps in service recirculating to the pond or Train A/Train B s provided with one service water pump in service recirculating and non-essential turbine building loads isolated. 	service water is
7.3 Vital Auxiliaries – Component C Water	ooling • Unit 1: Train A component cooling water is provided with non- isolated.	essential loads
	 Unit 2: Train A/Train B component cooling water is provided w essential loads isolated. 	/ith non-
7.4 Vital Auxiliaries – HVAC	 Unit 1: Control Room cooling is provided by Train A/Train B H cooling at essential locations is provided with performance-ba HVAC equipment corresponding to the service water train. 	
	 Unit 2: Control Room cooling is provided by Train A/Train B H cooling at essential locations is provided with HVAC equipment corresponding to the service water train. 	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.









Fire Area ID: Compliance Basis:	1-S02 - Stairwell No. 2 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	- The fire hazards and fire protection features on both sides of the harrier ware described

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

.

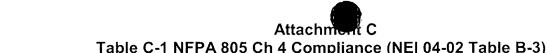
Fire Area ID: Compliance Basis:	1-S02 - Stairwell No. 2 Unit 1: NFPA 805, Section 4.2.4.2 Perform Unit 2: NFPA 805, Section 4.2.3 Determini	ance-Based Approach - Fire stic Approach	Required Fire Protection Systems and Features Risk Evaluation with simplifying deterministic assumptions
Required FP System(s)/Feature Detection Passive Passive Passive	e(s) Description 1A-108 Restricted transient controls Three Hour Rated Enclosure Three Hour Rated Enclosure	Required By EEEE/LA EEEE/LA Risk Criteria Separation	Comments Required to support a fire boundary evaluation. Required to support a fire boundary evaluation. Required to meet the risk criteria. Required to support the NSCA.
			· · · · ·
Fire Safety Analysis Data Manag	er (4.1)	Farley	Run: 08/18/2012 22:08 Page: 1253 of 243



Fire Area ID: Compliance Basis:	1-S02 - Stairwell No. 2 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	FRE for Fire Area 1-S02	
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic rec NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of safety margins. The fire risk evaluation determined that with the Existing Promat H board for cable protection, the applicable risk, defense margin criteria were satisfied.	defense in depth and
Δ CDF		
Δ LERF		
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID erection Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area FRE for this area, no additional DID features were identified.	
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety ana criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysu uncertainty. As such, the Safety Margins are maintained.	
Comments		

Fire Area ID: Compliance Basis:	1-S02 - Stairwell No. 2 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-S02-HVAC-001
VFDR	Q1R15A0006:ENERGIZED:ENERGIZED-SUT1A, 4160V SWITCHGEAR BUS 1F - This component, Switchgear 1F (600V Load Center D Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-S02-SEP-009
VFDR	Q1N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Fire induced circuit failure to the cited control cable could result in spurious opening of the MSARV 3371A. Spurious opening of the MSARV could prevent atmospheric relief from being achieved on the secondary side. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.





Fire Area ID: Compliance Basis:	1-S08 - Stairwell No. 8 NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID 1-S08	Description Stairwell No. 8	
· ·		
	· ·	

Run: 08/18/2012 22:08 Page: 1256 of 2430

	-S08 - Stairwell No. 8 FPA 805, Section 4.2.3 Deterministic Approach	Performance	Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Su Conditions	bcritical Subcritical conditions are maintained by isolating the VCT to p dilution and by charging borated water from the RWST using pump, Train B charging pump or swing charging pump via Tra power.	Frain A charging	
3.1 RCS Inventory Control - RCS M	lakeup RCS inventory is controlled using Train A charging pump, Tra pump or swing charging pump via Train A/Train B power align		
3.2 RCS Inventory Control - Isolate Paths	Leakage Normal letdown is isolated using orifice isolation valves, a leto valve, or a letdown path containment isolation valve. Excess l isolated using one or more excess letdown or containment iso PZR PORV leakage paths are isolated using Train A PORV a PORV. The RCS to RHR high/low pressure interface is isolate Train A/Train B RHR inboard isolation valve and Train A/Train outboard isolation valve.	etdown is lation valves. nd Train B ed using the	
3.3 RCS Inventory Control - RCP S	eal Integrity Maintain RCP Seal Integrity - RCP seal integrity is maintained RCPs, maintaining normal seal injection using Train A chargir charging pump or swing charging pump via Train A/Train B po preventing failure of the RCP thermal barriers. RCP seal inject secured by isolating the supply and discharge seal injection lin RCP thermal barriers are isolated using containment isolation CCW to RCP thermal barrier isolation valve.	g pump, Train B ower, and tion paths are nes. CCW to	
4.1 RCS Pressure Control - Pressu	re Transient Undesired depressurization due to inadvertent spray is prever ensuringauxiliary spray valve remains closed and the Loop 1 a RCPs are shut off.Undesired pressure increase is prevented the all pressurizer heater groups.	and Loop 2	
4.2 RCS Pressure Control - Positive Control	 Pressure Positive control of RCS pressure is accomplished with Train A PORV or aux spray for pressure reduction and Pressurizer He for pressure increase. 		
	· · · · ·		

.







	-S08 - Stairwell No. 8 IFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplish MDAFW, Train B MDAFW pump and TDAFW pump s Generator 1A/1B/1C. Main feed is isolated to prevent 	upplying Steam	
	 Unit 2: Decay heat removal during HSD is accomplish MDAFW, Train B MDAFW pump, or TDAFW pump su Generator 2A/2B/2C. Main feed is isolated to prevent cooldown. 	pplying Steam	
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is mo range detector Ch 1/Ch 2. 2. RCS Pressure - RCS p PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety c range pressure for Loop 1/Loop 3. 3. Pressurizer Le monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Ter 1/Loop 2/Loop 3 temperature is monitored by loop ho RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C monitored. 6. SG Level - Steam Generator 1A/1B/1C 	ressure is monitored by nannel, and RCS wide rel - Pressurizer level is nperature - RCS Loop and cold leg pressure is	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is morange detector Ch 1/Ch 2. 2. RCS Pressure - RCS p PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety c range pressure for Loop 1/Loop 3. 3. Pressurizer Le monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Ter 1/Loop 2/Loop 3 temperature is monitored by loop hor RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C monitored. 6. SG Level - Steam Generator 2A/2B/2C 	ressure is monitored by nannel, RCS wide rel - Pressurizer level is nperature - RCS Loop and cold leg pressure is	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and supplied by Train A/Train B distribution equipment. 3 120 VAC power is supplied by Train A/Train B equipm 	600 V power is 125 VDC power and	
	 Unit 2: 1. Electrical power is supplied by off-site power diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and supplied by Train A/Train B distribution equipment. 3 120 VAC power is supplied by Train A/Train B equipment 	500 V power is 125 VDC power and	
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two servi service recirculating to the pond or Train A/Train B service water pump in service recirculating to essential turbine building loads isolated.	ice water is provided	
7.3 Vital Auxiliaries Component Co	ooling Water Train A/Train B component cooling water is provided w isolated.	th non-essential loads	

Fire Area ID:	1-S08 - Stairwell No. 8	Performance Goals
Compliance Basis:	NFPA 805, Section 4.2.3 Deterministic Approach	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.









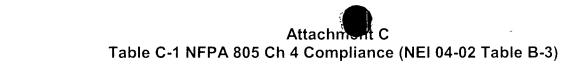
Fire Area ID: Compliance Basis:	1-S08 - Stairwell No. 8 Engineering Evaluat NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive ·	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Required FP System(s)/Feature(s) Passive	Description Restricted transient controls	Required By EEEE/LA	Comments Required to support a fire boundary ev	aluation.	
•					
ire Safety Analysis Data Manager (4.1)).	Farley	F	Run: 08/18/2012 22:08	Page: 1261 of 243



Fire Area ID: Compliance Basis:	1-S08 - Stairwell No. 8 NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
Δ CDF		
ΔLERF		
DID Maintained		
Safety Margin Maintained		
Comments		

Fire Zone ID 1-S10	Description Stairwell No. 10					
					×	
Fire Safety Analysis Data Ma			⁻ arley	Run: 08/18/2		Page: 1263 of 2430



		l No. 10 5, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 5, Section 4.2.3 Deterministic Approach	Performance Goals	
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	р	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Su Conditions		Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.		
3.1 RCS Inventory Control - RCS M		RCS inventory is controlled using {Train A / Train B charging pump, swing charging pump via Train A/Train B power} aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Paths		Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	• • •	
3.3 RCS Inventory Control - RCP S		Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressu		Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		

	Jnit 1: NFPA 805, Section 4.2	rwell No. 10 A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions A 805, Section 4.2.3 Deterministic Approach		
Performance Goal	Method of A	ccomplishment	Comments	
4.2 RCS Pressure Control - Positiv Control	PORV or aux	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal	MDAFW, T	ay heat removal during HSD is accomplished rain B MDAFW pump and TDAFW pump supp 1A/1B/1C. Main feed is isolated to prevent unc	olying Steam	
	MDAFW, TI	ay heat removal during HSD is accomplished irain B MDAFW pump, or TDAFW pump suppl 2A/2B/2C. Main feed is isolated to prevent unc	ying Steam	
6 Process Monitoring	range detec PZR narrow range press monitored b 1/Loop 2/Lo RTDs. 5. 5	Shutdown Margin - Shutdown margin is monito ctor Ch 1/Ch 2. 2. RCS Pressure - RCS press w range Ch 1/Ch 2/Ch 3, PZR non-safety chan sure for Loop 1/Loop 3. 3. Pressurizer Level- by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe oop 3 temperature is monitored by loop hot an SG Pressure - Steam Generator 1A/1B/1C pre 6. SG Level - Steam Generator 1A/1B/1C lev	sure is monitored by inel, and RCS wide - Pressurizer level is arature - RCS Loop d cold leg assure is	
	range detec PZR narrow range press monitored b 1/Loop 2/Lo RTDs. 5. 5	Shutdown Margin - Shutdown margin is monito ctor Ch 1/Ch 2. 2. RCS Pressure - RCS press w range Ch 1/Ch 2/Ch 3, PZR non-safety chan sure for Loop 1/Loop 3. 3. Pressurizer Level by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe pop 3 temperature is monitored by loop hot an SG Pressure - Steam Generator 2A/2B/2C pre 6. SG Level - Steam Generator 2A/2B/2C level	sure is monitored by nnel, RCS wide - Pressurizer level is arature - RCS Loop d cold leg essure is	з
7.1 Vital Auxiliaries – Electrical	diesel gene supplied by	Electrical power is supplied by off-site power vi erator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 / Train A/Train B distribution equipment. 3. 12 ower is supplied by Train A/Train B equipment	V power is 25 VDC power and	
	diesel gene	Electrical power is supplied by off-site power vi erator EDG1-2A/EDG-2B, 2, 4,16 kV and 600 / Train A/Train B distribution equipment, 3, 12 ower is supplied by Train A/Train B equipment) V power is 25 VDC power and	

Run: 08/18/2012 22:08 Page: 1265 of 2430





Fire Area ID: Compliance Basis:		rwell No. 10 A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sin A 805, Section 4.2.3 Deterministic Approach	Performance Goals	
Performance Goal		Method of Accomplishment	Comments	
7.2 Vital Auxiliaries – Servi	ice Water	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Com Water	ponent Cooling	Train A/Train B component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVA	с	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-S10 - Stairwell No. 10 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	• The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,
	 Elements with construction features equal to 3-hr boundaries were credited as such,
	• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

.

Ċ



Compliance Basis:	-S10 - Stairwell No. 10 Jnit 1: NFPA 805, Section 4.2.4.2 Performa Jnit 2: NFPA 805, Section 4.2.3 Determinis	ance-Based Approach - Fire stic Approach	Required Fire Protection Risk Evaluation with simplifying deterministic assumptions	Systems and Features
Required FP System(s)/Feature(s Passive) Description Restricted transient controls	Required By EEEE/LA	Comments Required to support a fire boundary evaluation.	
			·	
Fire Safety Analysis Data Manage	r (4 1)	Farley	Run: 08/18/2012 22:0	08 Page: 1268 of 2430

Fire Area ID: Compliance Basis:	1-S10 - Stairwell No. 10 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 1-S10
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined the applicable risk, defense-in-depth; and safety margin criteria were satisfied.
Δ CDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Safety Analysis Data Manager (4.1)





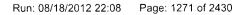
Fire Area ID: Compliance Basis:	1-S10 - Stairwell No. 10 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-S10-SEP-001
VFDR	Q1P15SV3103:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID SOLENOID VALVE - Fire induced circuit failure to the sampling valve control circuits could spuriously open these valves. Failure to isolate the sampling lines could lead to a loss of RCS Inventory. Failure to isolate these lines challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition .	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-S10-SEP-002
VFDR	Q1P15SV3104:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM SOLENOID VALVE - Fire induced circuit failure to the sampling valve control circuits could spuriously open these valves. Failure to isolate the sampling lines could lead to a loss of RCS Inventory. Failure to isolate these lines challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-S10-SEP-003
VFDR	Q1P15SV3765:CLOSED:OPEN/CLOSED, REACTOR COOLANT HOT LEG SOLENOID VALVE - Fire induced circuit failure to the sampling valve control circuits could spuriously open these valves. Failure to isolate the sampling lies could lead to a loss of RCS Inventory. Failure to isolate these lines challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).

Fire Area ID:	1-SVB1-A - Service Water Valve Box, 1-SVB1, Train A	Fire Area Definition
Compliance Basis:	Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	

Fire Zone ID Description

-

1-SVB1-A Service Water Valve Box, 1-SVB1, Train A









Compliance Basis:	-SVB1-A - Service Water Valve Box, 1-SVB1, Train A Jnit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fir Jnit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Performar e Risk Evaluation with simplifying deterministic assumptions	ice Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Tri	p Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain St Conditions	 Unit 1: Subcritical conditions are maintained by isola boron dilution and by charging borated water from the charging pump or swing charging pump aligned to 1 	ne RWST using Train B	
	 Unit 2: Subcritical conditions are maintained by prev by charging borated water from the RWST using Tra Train B charging pump, or swing charging pump. 	venting boron dilution and ain A charging pump,	
3.1 RCS Inventory Control - RCS M	 • Unit 1: RCS inventory is controlled using Train B ch charging pump via Train B power aligned to the RW 	arging pump or swing ST.	
	 Unit 2: RCS inventory is controlled using Train A ch charging pump, or swing charging pump aligned to 		
3.2 RCS Inventory Control - Isolate Paths	Leakage Normal letdown is isolated using orifice isolation valve valve, or a letdown path containment isolation valve. isolated using one or more excess letdown or contain PZR PORV leakage paths are isolated using Train A PORV. The RCS to RHR high/low pressure interface Train A/Train B RHR inboard isolation valve and Train outboard isolation valve.	Excess letdown is ment isolation valves. PORV and Train B is isolated using the	
3.3 RCS Inventory Control - RCP S	 Unit 1: Maintain RCP Seal Integrity - RCP seal integrity or ripping all RCPs, maintaining normal seal injection pump or swing charging pump via Train B power, all the RCP thermal barriers. RCP seal injection paths the supply and discharge seal injection lines. CCW are isolated using containment isolation valves or the barrier isolation valve. 	using Train B charging nd preventing failure of are secured by isolating to RCP thermal barriers	
	 Unit 2: Maintain RCP Seal Integrity - RCP seal integrity pripring all RCPs, maintaining normal seal injection pump, Train B charging pump, or swing charging pump, failure of the RCP thermal barriers. RCP seal inject isolating the supply and discharge seal injection line barriers are isolated using containment isolation value thermal barrier isolation valve. 	using Train A charging ump, and preventing on paths are secured by es. CCW to RCP thermal	

Compliance Basis: Unit 1: NFPA		ervice Water Valve Box, 1-SVB1, Train A 305, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 305, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals	
Performance Goal		Method of Accomplishment	Comments		
4.1 RCS Pressure Control - Pre	essure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.			
4.2 RCS Pressure Control - Po Control	sitive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.			
5 Decay Heat Removal		 Unit 1: Decay heat removal during HSD is accomplished using Train B MDAFW pump or TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 			
		 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 			
6 Process Monitoring		 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 			
		 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 			

2

Fire Area ID: Compliance Basis:	1-SVB1-A - Service Water Valve Box, 1-SVB1, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Performance Goal	Method of Accomplishment	Comments	·
7.1 Vital Auxiliaries – Electrical	• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT diesel generator EDG-1B. 2. 4.16 kV and 600 V power is supplied by Tr A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power supplied by Train A/Train B equipment.	ain	
	 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power a 120 VAC power is supplied by Train A/Train B equipment. 		
7.2 Vital Auxiliaries – Service W	 Unit 1: Train B service water is provided with two service water pumps in service recirculating to the pond or Train B service water is provided with service water pump in service recirculating to the pond and non-essentia turbine building loads isolated. 		
	 Unit 2: Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 		
7.3 Vital Auxiliaries – Componer Water	Unit 1: Train B component cooling water is provided with non-essential lo isolated.	ads	
	 Unit 2: Train A/Train B component cooling water is provided with non- essential loads isolated. 		
7.4 Vital Auxiliaries – HVAC	 Unit 1: Control Room cooling is provided by Train A/Train B HVAC. Roon cooling at essential locations is provided with performance-based approa HVAC equipment corresponding to the service water train. 		
	 Unit 2: Control Room cooling is provided by Train A/Train B HVAC. Roon -cooling at essential locations is provided with HVAC equipment corresponding to the service water train. 	1	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-SVB1-A - Service Water Valve Box, 1-SVB1, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.



Farley



Compliance Basis: Uni		1-A - Service Water Valve Box, NFPA 805, Section 4.2.4.2 Perf NFPA 805, Section 4.2.3 Deterr	ormance-Based Approach - Fire	Required Fire Protection Systems and Features Risk Evaluation with simplifying deterministic assumptions
Required FP System(s)/Featu Procedures / Guidance	re(s) Description		Required By Risk Criteria	Comments Improvements to procedures necessary to incorporate recovery actions required to meet risk criteria.
			·	
		•		

Fire Area ID: Compliance Basis:	1-SVB1-A - Service Water Valve Box, 1-SVB1, Train A Fire Risk Evaluation Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Fire Risk Evaluation Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach Fire Risk Evaluation
Title	FRE for Fire Area 1-SVB1-A
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
ΔLERF	a the stilled
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	1-SVB1-A - Service Water Valve Box, 1-SVB1, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach				
VFDR ID	U1-1-SVB1-A-HVAC-001				
VFDR	Q1R15A0006:ENERGIZED:ENERGIZED-EDG1-2A, 4160V SWITCHGEAR BUS 1F - This component, Switchgear 1F (600V Load Center D Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).				
VFDR ID	U1-1-SVB1-A-HVAC-002				
VFDR	Q1R17B0001:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 1A - This component, MCC 1A, requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).				
VFDR ID	U1-1-SVB1-A-HVAC-003				
VFDR	Q1R42B0001A:ENERGIZED:ENERGIZED-BC1A, 125V DC BUS 1A - This component, 125V DC Bus 1A (Train A Battery Charger Inverter Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.				

Fire Area ID: Compliance Basis:		1-SVB1-B - Service Water Valve Box, 1-SVB1, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach			Fire Area Definition
·	Fire Zone ID 1-SVB1-B	Description Service Water Valve Box, 1-SVB1, Train B			
		~			

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	Unit 1: NFPA 80	vice Water Valve Box, 1-SVB1, Train B 05, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 05, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor	Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintair Conditions	n Subcritical	 Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump aligned to Train A power. 		
		• Unit 2: Subcritical conditions are maintained by preventing boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump, or swing charging pump.		
3.1 RCS Inventory Control - RC	S Makeup	 Unit 1: RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST. 		
		 Unit 2: RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump aligned to the RWST. 		
3.2 RCS Inventory Control - Isc Paths	late Leakage	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RC	CP Seal Integrity	• Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier.		
		 Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve. 		

Compliance Basis: Unit 1: NFPA 805, Secti		ervice Water Valve Box, 1-SVB1, Train B 305, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 305, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals	
Performance Goal		Method of Accomplishment	Comments		
4.1 RCS Pressure Control - Pres	sure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.			
4.2 RCS Pressure Control - Posi Control	tive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.			
5 Decay Heat Removal		 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump or TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 			
		 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 			
6 Process Monitoring		 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 			
		 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C level is monitored. 			



Compliance Basis:	1-SVB1-B - Service Water Valve Box, 1-SVB1, Train B Jnit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sir Jnit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goals ion with simplifying deterministic assumptions	
Performance Goal	Method of Accomplishment	Comments	
7.1 Vital Auxiliaries – Electrical	• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Trair A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
	• Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries – Service Wate	 Unit 1: Train A service water is provided with two service water pumps in service recirculating to the pond or Train A service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 		
	 Unit 2: Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 		
7.3 Vital Auxiliaries – Component Water	 Cooling Unit 1: Train A component cooling water is provided with non-essential loads isolated. 		
,	 Unit 2: Train A/Train B component cooling water is provided with non- essential loads isolated. 		
7.4 Vital Auxiliaries – HVAC	 Unit 1: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with performance-based approach HVAC equipment corresponding to the service water train. 		
	 Unit 2: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train. 		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

.

Fire Area ID: Compliance Basis:	1-SVB1-B - Service Water Valve Box, 1-SVB1, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
unctionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a docume rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:

• The fire areas, fire zones and rooms on both sides of the barrier were identified,

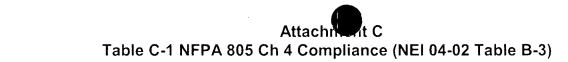
• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Run: 08/18/2012 22:08 Page: 1283 of 2430



Fire Area ID: Compliance Basis:	1-SVB1-B - Service Water Valve Box, 1-SVB1, Train B Required Fire Protection asis: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		
Required FP System(s)/Feature(s) Description		Required By	Comments
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to meet risk criteria.

Fire Area ID: Compliance Basis:	1-SVB1-B - Service Water Valve Box, 1-SVB1, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 1-SVB1-B
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Area ID: Compliance Basis:	1-SVB1-B - Service Water Valve Box, 1-SVB1, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-SVB1-B-HVAC-001
VFDR	Q1R15A0007:ENERGIZED:ENERGIZED-EDG1B, 4160V SWITCHGEAR BUS 1G - This component, Switchgear 1G (600V Load Center E Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-SVB1-B-HVAC-002
VFDR	Q1R17B0002:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 1B - This component, MCC 1B (MCC 1B Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-SVB1-B-HVAC-003
VFDR	Q1R42B0001B:ENERGIZED:ENERGIZED-BC1B, 125V DC BUS 1B - This component, 125V DC Bus 1B (Train B Battery Charger Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.

.

Fire Area ID:	1-SVB2-A - Service Water Valve Box, 1-SVB2, Train A	Fire Area Definition
Compliance Basis:	Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	

Fire Zone ID Description

1-SVB2-A Service Water Valve Box, 1-SVB2, Train A

Run: 08/18/2012 22:08 Page: 1287 of 2430





Fire Area ID: Compliance Basis:	Unit 1: NFPA 8	rvice Water Valve Box, 1-SVB2, Train A 05, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sin 05, Section 4.2.3 Deterministic Approach	nplifying deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor	Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Conditions	Subcritical	 Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump aligned to Train B power. 		
		 Unit 2: Subcritical conditions are maintained by preventing boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump, or swing charging pump. 		
3.1 RCS Inventory Control - RC	S Makeup	 Unit 1: RCS inventory is controlled using Train B charging pump or swing charging pump via Train B power aligned to the RWST. 		
		 Unit 2: RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump aligned to the RWST. 		
3.2 RCS Inventory Control - Isol Paths	ate Leakage	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RC	P Seal Integrity	• Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier barrier isolation valve.		
		 Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve. 		

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:				Performance Goals
Performance Goal		Method of Accomplishment	Comments	
4.1 RCS Pressure Control - Pre	essure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Po Control	sitive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal		 Unit 1: Decay heat removal during HSD is accomplished using Train B MDAFW pump or TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
		 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 		
6 Process Monitoring		• Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C level is monitored.		
		• Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C level is monitored.		



Fire Area ID: Compliance Basis:	1-SVB2-A - Service Water Valve Box, 1-SVB2, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalua Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	ation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
7.1 Vital Auxiliaries – Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT diesel generator EDG-1B. 2. 4.16 kV and 600 V power is supplied A/Train B distribution equipment. 3. 125 VDC power and 120 V supplied by Train A/Train B equipment. 	ied by Train
	 Unit 2: 1. Electrical power is supplied by off-site power via SUT: diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V powe supplied by Train A/Train B distribution equipment. 3. 125 VDC 120 VAC power is supplied by Train A/Train B equipment. 	eris
7.2 Vital Auxiliaries – Service V	 Unit 1: Train B service water is provided with two service water p service recirculating to the pond or Train B service water is provi service water pump in service recirculating to the pond and non- turbine building loads isolated. 	ided with one
	 Unit 2: Train A/Train B service water is provided with two service pumps in service recirculating to the pond or Train A/Train B ser provided with one service water pump in service recirculating to and non-essential turbine building loads isolated. 	vice water is
7.3 Vital Auxiliaries – Compone Water	• Unit 1: Train B component cooling water is provided with non-ess isolated.	sential loads
	 Unit 2: Train A/Train B component cooling water is provided with essential loads isolated. 	i non-
7.4 Vital Auxiliaries – HVAC	 Unit 1: Control Room cooling is provided by Train A/Train B HVA cooling at essential locations is provided with performance-base HVAC equipment corresponding to the service water train. 	
	 Unit 2: Control Room cooling is provided by Train A/Train B HVA cooling at essential locations is provided with HVAC equipment corresponding to the service water train. 	AC. Room

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-SVB2-A - Service Water Valve Box, 1-SVB2, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.



Fire Area ID: Compliance Basis:	1-SVB2-A - Service Water Valve Box, 1-SVB2, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach			
Required FP System(s)/Feature Procedures / Guidance	e(s) Description	Required By Risk Criteria	Comments Improvements to procedures necessary to incorporate recovery actions required to mee risk criteria.	
		F -J	Run: 08/18/2012 22:09 Page: 1292 of 2430	
Fire Safety Analysis Data Mana	951 (T. 1)	Farley	Null. 00/10/2012 22.03 1 age. 1292 01 2430	

Fire Area ID: Compliance Basis:	1-SVB2-A - Service Water Valve Box, 1-SVB2, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 1-SVB2-A
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Area ID: Compliance Basis:	1-SVB2-A - Service Water Valve Box, 1-SVB2, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-1-SVB2-A-HVAC-001
VFDR	Q1R15A0006:ENERGIZED:ENERGIZED-EDG1-2A, 4160V SWITCHGEAR BUS 1F - This component, Switchgear 1F (600V Load Center D Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-SVB2-A-HVAC-002
VFDR	Q1R17B0001:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 1A - This component, MCC 1A (MCC 1A Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-1-SVB2-A-HVAC-003
VFDR	Q1R42B0001A:ENERGIZED:ENERGIZED-BC1A, 125V DC BUS 1A - This component, 125V DC Bus 1A (Train A Battery Charger Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.

 Fire Area ID:
 1-SVB2-B - Service Water Valve Box, 1-SVB2, Train B
 Fire Area Definition

 Compliance Basis:
 Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
 Fire Area Definition

 Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
 Fire Area Definition
 Fire Area Definition

Fire Zone ID Description

1-SVB2-B Service Water Valve Box, 1-SVB2, Train B

Fire Safety Analysis Data Manager (4.1)







Fire Area ID: Compliance Basis:	Unit 1: NFPA 80	vice Water Valve Box, 1-SVB2, Train B)5, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with si)5, Section 4.2.3 Deterministic Approach	mplifying deterministic assumptions	Performance Goals
Performance Goal	· · · · · · · · · · · · · · · · · · ·	Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor 1	Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Conditions	Subcritical	 Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump aligned to Train A power. 		
		• Unit 2: Subcritical conditions are maintained by preventing boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump, or swing charging pump.	3	
3.1 RCS Inventory Control - RCS	S Makeup	 Unit 1: RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST. 		
		 Unit 2: RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump aligned to the RWST. 		
3.2 RCS Inventory Control - Isola Paths	ate Leakage	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCF	^D Seal Integrity	• Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
		 Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve. 		

Compliance Basis: Ur				Performance Goals
Performance Goal		Method of Accomplishment	Comments	
4.1 RCS Pressure Control - Pressur	e Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	٦	
4.2 RCS Pressure Control - Positive Control	Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal		 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump or TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
		 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 		
6 Process Monitoring		 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 		
		 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 		

Compliance Basis:	1-SVB2-B - Service Water Valve Box, 1-SVB2, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Risk Evaluation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
7.1 Vital Auxiliaries – Electrical	• Unit 1: 1. Electrical power is supplied by off-site pow diesel generator EDG1-2A. 2. 4.16 kV and 600 V po A/Train B distribution equipment. 3. 125 VDC power supplied by Train A/Train B equipment.	ower is supplied by Train
	 Unit 2: 1. Electrical power is supplied by off-site pow diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and supplied by Train A/Train B distribution equipment. 3 120 VAC power is supplied by Train A/Train B equipr 	600 V power is 3. 125 VDC power and
7.2 Vital Auxiliaries – Service Wal	 Unit 1: Train A service water is provided with two ser service recirculating to the pond or Train A service w service water pump in service recirculating to the por turbine building loads isolated. 	ater is provided with one
	 Unit 2: Train A/Train B service water is provided with pumps in service recirculating to the pond or Train A/ provided with one service water pump in service recir and non-essential turbine building loads isolated. 	/Train B service water is
7.3 Vital Auxiliaries – Component Water	 Cooling Unit 1: Train A component cooling water is provided isolated. 	with non-essential loads
	 Unit 2: Train A/Train B component cooling water is pressential loads isolated. 	rovided with non-
7.4 Vital Auxiliaries – HVAC	 Unit 1: Control Room cooling is provided by Train A/ cooling at essential locations is provided with perform HVAC equipment corresponding to the service water 	nance-based approach
	 Unit 2: Control Room cooling is provided by Train A/ cooling at essential locations is provided with HVAC corresponding to the service water train. 	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-SVB2-B - Service Water Valve Box, 1-SVB2, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	• The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

-



Attachment C
Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	1-SVB2-B - Service Water Valve Box, 1-SVB2, Train B Basis: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterr Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		Required Fire Protection Systems and Features blifying deterministic assumptions	
Required FP System(s)/Feature	(s) Description	Required By	Comments	

Procedures / Guidance

•

Risk Criteria

Improvements to procedures necessary to incorporate recovery actions required to meet risk criteria.

Fire Area ID: Compliance Basis:	1-SVB2-B - Service Water Valve Box, 1-SVB2, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 1-SVB2-B
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

.

Fire Area ID: Compliance Basis:	1-SVB2-B - Service Water Valve Box, 1-SVB2, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR ID	U1-1-SVB2-B-HVAC-001		
VFDR	Q1R15A0007:ENERGIZED:ENERGIZED-EDG1B, 4160V SWITCHGEAR BUS 1G - This component, Switchgear 1G (600V Load Center E Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-SVB2-B-HVAC-002		
VFDR	Q1R42B0001B:ENERGIZED:ENERGIZED-BC1B, 125V DC BUS 1B - This component, 125V DC Bus 1B (Train B Battery Charger Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.		
VFDR ID	U1-1-SVB2-B-HVAC-003		
VFDR	Q1R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 1B - This component, Battery 1B (Train B Battery Room Exh Fan), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		

Fire Area ID: Compliance Basis:	1-SVB3-A - Service Water Valve Box, 1-SVB3, Train A NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID 1-SVB3-A	Description Service Water Valve Box, 1-SVB3, Train A	
		, ,

Run: 08/18/2012 22:09 Page: 1303 of 2430



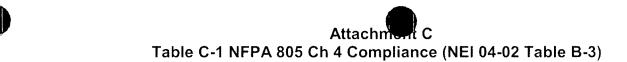
Fire Area ID: Compliance Basis:		rvice Water Valve Box, 1-SVB3, Train A ction 4.2.3 Deterministic Approach		Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor	r Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintai Conditions	n Subcritical	Subcritical conditions are maintained by preventing boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump, or swing charging pump.		
3.1 RCS Inventory Control - RC	CS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump aligned to the RWST.		
3.2 RCS Inventory Control - Isc Paths	olate Leakage	Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RC	CP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pre	essure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuringauxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off.Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Po Control	sitive Pressure	Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		

Δ.

Fire Area ID: Compliance Basis:	1-SVB3-A - Service Water Valve Box, 1-SVB3, Train A NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	 Unit1: Decay heat removal during HSD is accomplished MDAFW, Train B MDAFW pump and TDAFW pump sin Generator 1A/1B/1C. Main feed is isolated to prevent 	upplying Steam	
	 Unit 2: Decay heat removal during HSD is accomplish MDAFW, Train B MDAFW pump, or TDAFW pump su Generator 2A/2B/2C. Main feed is isolated to prevent 	pplying Steam	
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is mor range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pr PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety cl range pressure for Loop 1/Loop 3. 3. Pressurizer Lev monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Ten 1/Loop 2/Loop 3 temperature is monitored by loop hot RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C monitored. 6. SG Level - Steam Generator 1A/1B/1C 	ressure is monitored by nannel, and RCS wide rel - Pressurizer level is nperature - RCS Loop and cold leg pressure is	
	 Unit 2: 1. Shutdown Margin - Shutdown margin is mor range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pr PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety ch range pressure for Loop 1/Loop 3. 3. Pressurizer Lev monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Ten 1/Loop 2/Loop 3 temperature is monitored by loop hot RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C monitored. 6. SG Level - Steam Generator 2A/2B/2C 	ressure is monitored by nannel, RCS wide rel - Pressurizer level is nperature - RCS Loop and cold leg pressure is	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 6 supplied by Train A/Train B distribution equipment. 3. 120 VAC power is supplied by Train A/Train B equipm 	00 V power is 125 VDC power and	
	 Unit 2: 1. Electrical power is supplied by off-site power diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 6 supplied by Train A/Train B distribution equipment. 3. 120 VAC power is supplied by Train A/Train B equipment 	000 V power is 125 VDC power and	
7.2 Vital Auxiliaries Service Wate	r Train A/Train B service water is provided with two servic service recirculating to the pond or Train A/Train B service water pump in service recirculating to t essential turbine building loads isolated.	ce water is provided	
7.3 Vital Auxiliaries Component C	cooling Water Train A/Train B component cooling water is provided will isolated.	th non-essential loads	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1305 of 2430



Fire Area ID: Compliance Basis:	1-SVB3-A - Service Water Valve Box, 1-SVB3, Train A NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-SVB3-A - Service Water Valve Box, 1-SVB3, Train A Engineering Evaluation NFPA 805, Section 4.2.3 Deterministic Approach Engineering Evaluation
Engineering Evaluation ID	SM-C051326701-006 Identify Regulatory Fire Barriers
Revision	3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,

- The fire hazards and fire protection features on both sides of the barrier were described,
- Elements with construction features equal to 3-hr boundaries were credited as such,
- The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

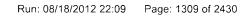




Fire Area ID: Compliance Basis:	1-SVB3-A - Service Water Valve Box, 1-SVB3, Train A NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
ΔCDF		
Δ LERF		
DID Maintained	·	
Safety Margin Maintained		
Comments		

.

Fire Area ID: Compliance Basis:	1-SVB3-B - Service Water Valve Box, 1-SVB3, Train B NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
1-SVB3-B	Service Water Valve Box, 1-SVB3, Train B	



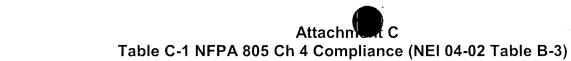




Fire Area ID: Compliance Basis:		rvice Water Valve Box, 1-SVB3, Train B ction 4.2.3 Deterministic Approach	Performance Goals
Performance Goal		Method of Accomplishment	Comments
1 Primary Control Station		Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Rea	ctor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Mair Conditions	atain Subcritical	Subcritical conditions are maintained by preventing boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump, or swing charging pump.	
3.1 RCS Inventory Control -	RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump aligned to the RWST.	
3.2 RCS Inventory Control - Paths	Isolate Leakage	Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control -	RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging.pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control -	Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuringauxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off.Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Control	Positive Pressure	Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	
5 Decay Heat Removal		 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 	
		 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 	

	I-SVB3-B - Service Water Valve Box, 1-SVB3, Train B NFPA 805, Section 4.2.3 Deterministic Approach	Performance Go
Performance Goal	Method of Accomplishment	Comments
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by serange detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is m PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressur monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - 1 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold le RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C level is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 	ionitored by RCS wide rizer level is RCS Loop g
	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by srange detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is m PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressur monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold le RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is mo 	ionitored by S wide rizer level is RCS Loop g
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 1. diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V powe supplied by Train A/Train B distribution equipment. 3. 125 VDC p 120 VAC power is supplied by Train A/Train B equipment. 	ris
	 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2 diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V powe supplied by Train A/Train B distribution equipment. 3. 125 VDC p 120 VAC power is supplied by Train A/Train B equipment. 	ris
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service water pur service recirculating to the pond or Train A/Train B service water is with one service water pump in service recirculating to the pond an essential turbine building loads isolated.	provided
7.3 Vital Auxiliaries Component Co	oling Water Train A/Train B component cooling water is provided with non-esse isolated.	ntial loads
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room essential locations is provided with HVAC equipment corresponding service water train.	





Fire Area ID:	1-SVB3-B - Service Water Valve Box, 1-SVB3, Train B	Performance Goals
Compliance Basis:	NFPA 805, Section 4.2.3 Deterministic Approach	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-SVB3-B - Service Water Valve Box, 1-SVB3, Train B NFPA 805, Section 4.2.3 Deterministic Approach	Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block building such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines	a documented/credited 3-hr
	Bases for Acceptability:	
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, 	

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Run: 08/18/2012 22:09 Page: 1313 of 2430



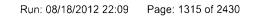
Fire Area ID: Compliance Basis:	1-SVB3-B - Service Water Valve Box, 1-SVB3, Train B NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Fitle	N/A .	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
∆ CDF		
∆ LERF		
DID Maintained		
Safety Margin Maintained		
Comments		

.

、

Fire Area ID: Compliance Basis:	1-SVB4-A - Service Water Valve Box, 1-SVB4, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
1-SVB4-A	Service Water Valve Box, 1-SVB4, Train A	

Fire Safety Analysis Data Manager (4.1)



t



١



Compliance Basis: Unit 1: NFPA 8	ervice Water Valve Box, 1-SVB4, Train A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 805, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	 Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump aligned to Train B power. 		
	 Unit 2: Subcritical conditions are maintained by preventing boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump, or swing charging pump. 		
3.1 RCS Inventory Control - RCS Makeup	 Unit 1: RCS inventory is controlled using Train B charging pump or swing charging pump via Train B power aligned to the RWST. 		
	 Unit 2: RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump aligned to the RWST. 		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity	• Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
• •	 Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve. 		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1316 of 2430

Compliance Basis: Unit 1: NFPA 8	Service Water Valve Box, 1-SVB4, Train A A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions A 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal	 Unit 1: Decay heat removal during HSD is accomplished using Train B MDAFW pump or TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 		
6 Process Monitoring	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 		
	• Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C level is monitored.		

Fire Safety Analysis Data Manager (4.1)





Compliance Basis:	I-SVB4-A - Service Water Valve Box, 1-SVB4, Train A Jnit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with si Jnit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goals	
Performance Goal	Method of Accomplishment	Comments	
7.1 Vital Auxiliaries – Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 		
	 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 		
7.2 Vital Auxiliaries – Service Wate	 Unit 1: Train B service water is provided with two service water pumps in service recirculating to the pond or Train B service water is provided with on service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 	e	
	 Unit 2: Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 	3	
7.3 Vital Auxiliaries - Component (Water	 Cooling Unit 1: Train B component cooling water is provided with non-essential loads isolated. 	5	
	 Unit 2: Train A/Train B component cooling water is provided with non- essential loads isolated. 		
7.4 Vital Auxiliaries – HVAC	 Unit 1: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with performance-based approach HVAC equipment corresponding to the service water train. 		
	 Unit 2: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train. 		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-SVB4-A - Service Water Valve Box, 1-SVB4, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines. Bases for Acceptability:
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described,

- Elements with construction features equal to 3-hr boundaries were credited as such,
- The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.











Compliance Basis:	1-SVB4-A - Service Water Valve Unit 1: NFPA 805, Section 4.2.4. Unit 2: NFPA 805, Section 4.2.3	2 Performance-Based Approach - Fire F	Required Fire Protection Systems and F Risk Evaluation with simplifying deterministic assumptions	eatures
Required FP System(s)/Feature Procedures / Guidance	(s) Description	Required By Risk Criteria	Comments Improvements to procedures necessary to incorporate recovery actions required to m risk criteria.	
Fire Safety Analysis Data Manag	er (4.1)	Farley	Run: 08/18/2012 22:09 Page: 1320) of 2430

Fire Area ID: Compliance Basis:	1-SVB4-A - Service Water Valve Box, 1-SVB4, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 1-SVB4-A
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth ar safety margins. The fire risk evaluation determined that with the specified recovery actions, the applicable risk, defense-in-depth, and safety margin criteria w satisfied.
ΔCDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Run: 08/18/2012 22:09 Page: 1321 of 2430





Fire Area ID: Compliance Basis:	1-SVB4-A - Service Water Valve Box, 1-SVB4, Train A Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR ID	U1-1-SVB4-A-HVAC-001		
VFDR	Q1R15A0006:ENERGIZED:ENERGIZED-EDG1-2A, 4160V SWITCHGEAR BUS 1F - This component, Switchgear 1F (600V Load Center D Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-SVB4-A-HVAC-002		
VFDR	Q1R17B0001:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 1A - This component, MCC 1A (MCC 1A Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-SVB4-A-HVAC-003		
VFDR	Q1R42B0001A:ENERGIZED:ENERGIZED-BC1A, 125V DC BUS 1A - This component, 125V DC Bus 1A (Train A Battery Charger Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.		

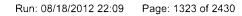
Fire Area ID:	1-SVB4-B - Service Water Valve Box, 1-SVB4, Train B	Fire Area Definition
Compliance Basis:	Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	

Fire Zone ID Description

1-SVB4-B

Service Water Valve Box, 1-SVB4, Train B

Fire Safety Analysis Data Manager (4.1)













Fire Area ID: Compliance Basis:	Unit 1: NFPA 80	vice Water Valve Box, 1-SVB4, Train B 05, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 05, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor T	rip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain S Conditions	Subcritical	• Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump aligned to Train A power. Unit 2: Subcritical conditions are maintained by preventing boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump, or swing charging pump		
3.1 RCS Inventory Control - RCS	Makeup	 Unit 1: RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST. 		
		 Unit 2: RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump aligned to the RWST. 		
3.2 RCS Inventory Control - Isola Paths	ite Leakage	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity		• Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
		• Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		

Fire Area ID: Compliance Basis:	Unit 1: NFPA 8	rvice Water Valve Box, 1-SVB4, Train B 05, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 05, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal	4 Mil	Method of Accomplishment	Comments	
4.1 RCS Pressure Control - Pre	ssure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Pos Control	sitive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal		 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump or TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
		 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 		
6 Process Monitoring		 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 		
		 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 		

.



Compliance Basis: 1	-SVB4-B - Service Water Valve Box, 1-SVB4, Train B Jnit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim Jnit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goa	
Performance Goal	Method of Accomplishment	Comments	
7.1 Vital Auxiliaries – Electrical	• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
	• Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries – Service Wate	 Unit 1: Train A service water is provided with two service water pumps in service recirculating to the pond or Train A service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 		
	 Unit 2: Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 		
7.3 Vital Auxiliaries – Component (Water	• Unit 1: Train A component cooling water is provided with non-essential loads isolated.		
	 Unit 2: Train A/Train B component cooling water is provided with non- essential loads isolated. 		
7.4 Vital Auxiliaries – HVAC	 Unit 1: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with performance-based approach HVAC equipment corresponding to the service water train. 		
	 Unit 2: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train. 		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. No automatic suppression is installed in this area. Discharge of manual suppression water to adjacent compartments is controlled and watertight barriers exist between divisions; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-SVB4-B - Service Water Valve Box, 1-SVB4, Train B Engineering Evaluation Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Engineering Evaluation Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:

• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.







Compliance Basis:	1-SVB4-B - Service Water Valve Bo Unit 1: NFPA 805, Section 4.2.4.2 P Unit 2: NFPA 805, Section 4.2.3 Del	erformance-Based Approach - Fire	Risk Evaluation with simplify	Required Fire Protection Systems and Features ving deterministic assumptions
Required FP System(s)/Feature(s) Description	Required By	Comments	

Risk Criteria

Procedures / Guidance

Improvements to procedures necessary to incorporate recovery actions required to meet risk criteria.

Fire Area ID: Compliance Basis:	1-SVB4-B - Service Water Valve Box, 1-SVB4, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach			
Title	FRE for Fire Area 1-SVB4-B			
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.			
ΔCDF				
Δ LERF				
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.			
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.			
Comments				
	·			





Fire Area ID: Compliance Basis:	1-SVB4-B - Service Water Valve Box, 1-SVB4, Train B Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR ID	U1-1-SVB4-B-HVAC-001		
VFDR	Q1R15A0007:ENERGIZED:ENERGIZED-SUT-1B, 4160V SWITCHGEAR BUS 1G - This component, Switchgear 1G, requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to Vital Auxiliaries Electrical Support Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-1-SVB4-B-HVAC-002		
VFDR	Q1R42B0001B:ENERGIZED:ENERGIZED-BC1B, 125V DC BUS 1B - This component, 125V DC Bus 1B (Train B Battery Charger Room Cooler), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.		
VFDR ID	U1-1-SVB4-B-HVAC-003		
VFDR	Q1R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 1B - This component, Battery 1B (Train B Battery Room Exhaust Fan), requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		

Fire Area ID: Compliance Basis:	······································	
Fire Zone ID	Description	
. 1-084-U1	Turbine, SGFP, and Hw Seal Oil Conditioners & Reservoirs	·
1-085-U1	Turbine Building, General Area	
1-087-U1	Steam Generator Feed Pumps A & B	
1-088-U1	Turbine Building Switchgear Area	

.

Fire Safety Analysis Data Manager (4.1)









	ine Building General Area ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump aligned to Train A / Train B power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance -based approach tripping all RCPs, maintaining normal seal charging using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray valves remain closed and the performance-based approach Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups.		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1332 of 2430

.

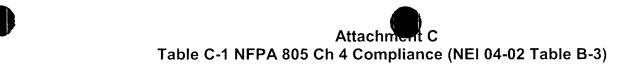
Fire Area ID: 1- Compliance Basis: N	TB-U1 - Turbine FPA 805, Sectio	e Building General Area on 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	N	Aethod of Accomplishment	Comments	
4.2 RCS Pressure Control - Positive Control	а	Positive control of RCS pressure is accomplished with performance-based pproach Train A PORV, Train B PORV or aux spray for pressure reduction nd Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal	S	Decay heat removal during HSD is accomplished using Train B MDAFW pump upplying Steam Generator 1A/1B/1C. Performance-based appraoch main sed is isolated to prevent uncontrolled cooldown.		
6 Process Monitoring	d n p n 1 R	. Shutdown Margin - Shutdown margin is monitored by source range etector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR arrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range ressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is nonitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop /Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is nonitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored.		•
7.1 Vital Auxiliaries – Electrical	k 1	. Electrical power is supplied by diesel generator EDG1-2A/EDG-1B. 2. 4.16 V and 600 V power is supplied by Train A/Train B distribution equipment. 3. 25 VDC power and 120 VAC power is supplied by Train A/Train B quipment.		
7.2 Vital Auxiliaries – Service Water	S	rain A/Train B service water is provided with two service water pumps in ervice recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-ssential turbine building loads isolated.		
7.3 Vital Auxiliaries – Component Co Water	Ŷ	rain A/Train B component cooling water is provided with non-essential loads solated.		
7.4 Vital Auxiliaries – HVAC	e	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at ssential locations is provided with HVAC equipment corresponding to the ervice water train.		

Fire Safety Analysis Data Manager (4.1)









Fire Area ID:	1-TB-U1 - Turbine Building General Area	Performance Goals
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Drainage capacity in the general Turbine Building area exceeds expected fire suppression flows. Local hazards protected by sprinkler or water spray systems have sufficient curbing and discharage of manual suppression water in adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-TB-U1 - Turbine Building General Area Engineering Evaluations NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.







	TB-U1 - Turbine Building General FPA 805, Section 4.2.4.2 Performa	neral Area formance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Required FP System(s)/Feature(s)	Description	Required By	Comments
Gaseous Suppression	1T-13	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	1T-13	DID Criteria	Required to meet DID criteria.
Gaseous Suppression	1T-14	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	1T-14	DID Criteria	Required to meet DID criteria.
Water Suppression	1T-10	DID Criteria	Required to meet DID criteria.
Water Suppression	1T-12B	DID Criteria	Required to meet DID criteria.
Water Suppression	1T-16C	DID Criteria	Required to meet DID criteria.
Water Suppression	1T-16D	DID Criteria	Required to meet DID criteria.
Water Suppression	1T-16E	DID Criteria	Required to meet DID criteria.
Water Suppression	1T-17	DID Criteria	Required to meet DID criteria.
Water Suppression	1T-18	DID Criteria	Required to meet DID criteria.
Water Suppression	1T-2	DID Criteria	Required to meet DID criteria.
Water Suppression	1 T- 20	DID Criteria	Required to meet DID criteria.
Water Suppression	1T-3	DID Criteria	Required to meet DID criteria.
Water Suppression	1T-9	DID Criteria	Required to meet DID criteria.
Modifications		Risk Criteria	Modification to provide fuse or other electrical isolation device at the DC shunt connection point.

,

Run: 08/18/2012 22:09 Page: 1336 of 2430

Fire Area ID: Compliance Basis:	1-TB-U1 - Turbine Building General Area NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	atio
Title	FRE for Fire Area 1-TB-U1	
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the modification to provide fuse or other electrical isolation device at the DC shunt connection point and the installed suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.	d
Δ CDF		
ΔLERF	The second s	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed suppression systems were identified as required for DID.	;
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.	
Comments		

-



Fire Area ID: Compliance Basis:	1-TB-U1 - Turbine Building General Area VFDF NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-1-TB-IA-001
VFDR	Q1E21V0243:CLOSED: CLOSED, RCS ALTERNATE CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the alternate charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Alternate Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-TB-IA-002
VFDR	Q1E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. An inability to modulate this valve due to a loss of instrument air would prevent de-pressurization of the RCS system to accommodate RCS transients. Failure to ensure cycling capability of this valve challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-TB-IA-003
VFDR	Q1E21V0245:CLOSED:OPEN/CLOSED, RCS PRESSURIZER AUX SPRAY - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. This valve is required to cycle in order to supply CVCS inventory to the pressurizer to de-pressurize via aux-spray, and the valve fails closed on a loss of instrument air. An inability to cycle this valve due to a loss of instrument air would prevent de-pressurization of the RCS via aux-spray. Failure to ensure cycling capability of this valve challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

.

Fire Area ID: Compliance Basis:	1-TB-U1 - Turbine Building General Area NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
VFDR ID	U1-1-TB-IA-004	
VFDR	Q1E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A loss of instrument air could result in this valve failing in the open position. Failure the throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-TB-IA-005	
VFDR	Q1N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrumer is assumed to be unavailable in this fire area because air loss paths have not been identified. Atmospheric relief on the secondary side is necessary in order achieve a controlled cool down rate. Failure to modulate the SG 1A ARV due to a loss of instrument air would cause the valve to fail closed. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Sec 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	er to
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-1-TB-SEP-001	
VFDR	N1N21P0001A:ON/STANDBY:OFF, CONDENSATE PUMP 1A - Decay Heat Removal via Auxiliary Feed water is credited, therefore all Main Feed water supplies need to be isolated. The Condensate Pumps supply feed water to the Main Feed pumps, which are not credited for cool down. Fire induced circuit failures could cause spurious operation of all condensate pumps for a fire in the turbine building. A loss of control power would also prevent remote tripping the condensate pumps. Failure to secure the condensate feed challenges the Decay Heat Removal Nuclear Safety Performance Goal. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	of
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Run: 08/18/2012 22:09 Page: 1339 of 2430



Fire Area ID: Compliance Basis:	1-TB-U1 - Turbine Building General Area VFDRs NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-1-TB-SEP-002
VFDR	Q1B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 1A DISTRIBUTION PANEL - A loss of control power to the pressurizer heaters would prevent the ability to trip the pressurizer heaters. Spurious heater operation could impact the fluid conditions within the pressurizer. If specific pressure conditions cannot be maintained, than the ability to de-pressurize is compromised. This failure challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-TB-SEP-003
VFDR	Q1B41P0001A:ON:OFF, RCP 1A - In order to achieve and maintain a natural circulation cool down, the Reactor Coolant Pumps must be tripped. A loss of control power to RCP 1A would prevent the Pump from being tripped from the control room. Failure to trip the RCP challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-TB-SEP-004
VFDR	Q1B41P0001B:ON:OFF, RCP 1B - In order to achieve and maintain a natural circulation cool down, the Reactor Coolant Pumps must be tripped. A loss of control power to RCP 1B would prevent the Pump from being tripped from the control room. Failure to trip the RCP challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-1-TB-SEP-005

Fire Safety Analysis Data Manager (4.1)

•

Run: 08/18/2012 22:09 Page: 1340 of 2430

Fire Area ID: Compliance Basis:	1-TB-U1 - Turbine Building General Area NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
VFDR	Q1B41P0001C:ON:OFF, RCP 1C - In order to achieve and maintain a natural circulation cool down, the Reactor Coolant Pumps must be tripped. A loss o control power to RCP 1C would prevent the Pump from being tripped from the control room. Failure to trip the RCP challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	f
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	·





Fire Area ID:	
Compliance Basis:	

1-TB-U2 - Turbine Building General Area NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions

Fire Area Definition

Fire Zone ID	Description
1-084-U2	Turbine, SGFP, and Hw Seal Oil Conditioners & Reservoirs
1-085-U2	Turbine Building, General Area
1-087-U2	Steam Generator Feed Pumps A & B

1-088-U2 Turbine Building Switchgear Area

	bine Building General Area action 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		· *
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by preventing boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump, or swing charging pump.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuringauxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off.Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump, or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown.		







	B-U2 - Turbine Building General Area PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Eval	Turbine Building General Area , Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Performance Goal	Method of Accomplishment	Comments		
6 Process Monitoring	 Shutdown Margin - Shutdown margin is monitored by s detector Ch 1/Ch 2. RCS Pressure - RCS pressure is narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, R pressure for Loop 1/Loop 3. Pressurizer Level - Press monitored by PZR level Ch 1/Ch 2/Ch 3. RCS Temper 1/Loop 2/Loop 3 temperature is monitored by loop hot and RTDs. SG Pressure - Steam Generator 2A/2B/2C pre- monitored. SG Level - Steam Generator 2A/2B/2C level 	monitored by PZR ICS wide range urizer level is rature - RCS Loop d cold leg ssure is		
7.1 Vital Auxiliaries Electrical	 Electrical power is supplied by diesel generator EDG1- 2B. 4.16 kV and 600 V power is supplied by Train A/T equipment. 125 VDC power and 120 VAC power is su A/Train B equipment. 	rain B distribution		
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service service recirculating to the pond or Train A/Train B service with one service water pump in service recirculating to the essential turbine building loads isolated.	e water is provided		
7.3 Vital Auxiliaries Component Cooli	ng Water Train A/Train B component cooling water is provided with isolated.	non-essential loads		
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVA essential locations is provided with HVAC equipment corr service water train.			

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Drainage capacity in the general Turbine Building area exceeds expected fire suppression flows. Local hazards protected by sprinkler or water spray systems have sufficient curbing and discharage of manual suppression water in adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	1-TB-U2 - Turbine Building General Area NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a doc rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, 	
	 The construction of the boundary and the potential issue with the element in question was described, 	
	 The fire hazards and fire protection features on both sides of the barrier were described, 	

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Run: 08/18/2012 22:09 Page: 1345 of 2430



	8-U2 - Turbine Building General Area A 805, Section 4.2.4.2 Performance-Ba	sed Approach - Fire Risk E	valuation with simplifying deterministi	Required Fire Protection Systems and Features
Required FP System(s)/Feature(s)	Description	Required By	Comments	
Detection	1T-13	DID Criteria	Required to meet DID criteria.	
Detection	1T-16A	DID Criteria	Required to meet DID criteria.	
Detection	1T-16B	DID Criteria	Required to meet DID criteria.	
Detection	1T-16C	DID Criteria	Required to meet DID criteria.	
Detection	1T-16D	DID Criteria	Required to meet DID criteria.	
Detection	1T-16E	DID Criteria	Required to meet DID criteria.	
Detection	1T-17	DID Criteria	Required to meet DID criteria.	
Detection	1 T -20	DID Criteria	Required to meet DID criteria.	
Gaseous Suppression	1T-13	Risk Criteria	Required to meet risk criteria.	
Gaseous Suppression	1T-14	Risk Criteria	Required to meet risk criteria.	

Fire Area ID: Compliance Basis:	1-TB-U2 - Turbine Building General Area NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 1-TB-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	





Fire Area ID: Compliance Basis:	1-TB-U2 - Turbine Building General Area VFDRs NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-1-TB-SEP-001
VFDR	N2B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL - The Pressurizer Heaters are required off in order control RCS Pressure, and avoid overpressure transients. A loss of control power to DC Bus 1H would prevent remote tripping of Pressurizer Heater Group E. This failure challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
2101	2101 Waste Gas Decay Tank Room	
2102	2102 Valve Compartment Room	
2103	2103 Corridor	
2104	2104 Passageway to Unit 1	
2105	2105 Catalytic H2 Recombiner 1A Room	
2106	2106 Catalytic H2 Recombiner 1B Room	
2108	2108 Waste Monitor Tank Room	
2109	2109 Waste Monitor Tank Pump Room	
2110	2110 Monitor Control Panel Room	
2111	2111 Containment Spray Pump Room 1A	
2112	2112 Access to Tendon Access Gallery	
2113	2113 Valve Encapsulation	
2114	2114 Pipe Chase	
2115	2115 Hallway	
2118	2118 Floor Drain Tank Room	
2119	2119 Waste Holdup Tank Room	
2120	2120 Corridor	
2121	2121 Floor Drain Tank Pump Room	•
2122	2122 Waste Evaporator Feed Pump Room	
2123	2123 Pipe Chase	
2124	2124 Valve Encapsulation	
2125	2125 Containment Spray Pump Room 1B	
2126	2126 Pipe Chase	
2127	2127 Pipe Chase	
2128	2128 RHR Heat Exchanger Room	
2129	2129 RHR Low Head Pump Room	
2130	2130 Pipe Chase	
2131	2131 RHR Low Head Pump Room	
2169	2169 Duct and Pipe Chase	
2183	2183 Tendon Access Gallery Entrance	
2184	2184 Piping Penetration Room, El. 100'-0"	
2196	2196 Access to Tendon Access Gallery	
2223	2223 Piping Penetration Room, El. 121'-0"	

Fire Safety Analysis Data Manager (4.1)

.

Fire Area ID: 2-001 - Aux Bui Compliance Basis: NFPA 805, Sec	Building Performance Cection 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station			
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	• Unit 2: Subcritical conditions are maintained by performance-based approach isolating the VCT to prevent boron dilution and by performance-based appraoch charging borated water from the RWST using Train B charging pump or swing charging pump via Train B power.		
	• Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.		
3.1 RCS Inventory Control - RCS Makeup	 Unit 2: RCS inventory is controlled using Train B charging pump or swing charging pump aligned to the RWST. 		
	• Unit 1: RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	• Unit 2: Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve.		
	• Unit 1: Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity	 Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance-based approach tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves. 		
	 Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection 		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1350 of 2430

	- Aux Building A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sin	nplifying deterministic assumptions	Performance Goals	
Performance Goal	Method of Accomplishment	Comments		
	paths are secured by isolating the supply and discharge seal injection CCW to RCP thermal barriers are isolated using containment isolation or the CCW to RCP thermal barrier isolation valve.			
4.1 RCS Pressure Control - Pressure Tr.	 Unit 2: Undesired depressurization due to inadvertent spray is prevent ensuring auxiliary spray valve remains closed and the Loop 1 and Loc RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater group 	op 2		
	 Unit 1: Undesired depressurization due to inadvertent spray is prevent ensuring auxiliary spray valve remains closed and the Loop 1 and Loo RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 			
4.2 RCS Pressure Control - Positive Pre Control	 Unit 2: Positive control of RCS pressure is accomplished with perform based appraoch Train B PORV for pressure reduction and Pressurize Heater Group B for pressure increase. 			
	 Unit 1: Positive control of RCS pressure is accomplished with Train A Train B PORV or aux spray for pressure reduction and Pressurizer He Group A/B for pressure increase. 			
5 Decay Heat Removal	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW or Train B MDAFW pump supplying Steam Generator 2C. Ma feed is isolated to prevent uncontrolled cooldown. 			
	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled code 			
6 Process Monitoring	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. RCS Pressure - RCS pressure is monitored pressure for Loop 1/Loop 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. RCS Temperature - RCS 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. Pressure - Steam Generator 2A/2B/2C pressure is monitored. 	ored by de level is S Loop SG		
	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. RCS Pressure - RCS pressure is monite PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS range pressure for Loop 1/Loop 3. Pressurizer Level - Pressurizer monitored by PZR level Ch 1/Ch 2/Ch 3. RCS Temperature - RCS 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. SG Pressure - Steam Generator 1A/1B/1C pressure is 	ored by S wide I level is		
Fire Safety Analysis Data Manager (4.1)) Farley	Run: 08/18/2012 22:0	9 Page: 1351 of 2430	

	2-001 - Aux Build NFPA 805, Sectic	Aux Building 305, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			Performance Goals
Performance Goal	Method of Accomplishment		Comments		
		monitored. 6. SG Level - Steam Gene	erator 1A/1B/1C level is monitor	ed.	
7.1 Vital Auxiliaries Electrical		Unit 2: 1. Electrical power is supplied to 2B. 2. Performance-based approach by Train A/Train B distribution equipment power is supplied by Train A/Train B economic supplication supplied by Train A/Train B economic supplication suppli	4.16 kV and 600 V power is sup ent. 3. 125 VDC power and 12	pplied	
	•	Unit 1: 1. Electrical power is supplied by diesel generator EDG1-2A/EDG-1B. 2 supplied by Train A/Train B distribution 120 VAC power is supplied by Train A/	2. 4.16 kV and 600 V power is a equipment. 3. 125 VDC powe		
7.2 Vital Auxiliaries Service Water	s v	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.			
7.3 Vital Auxiliaries Component Co		rain A/Train B component cooling wate solated.	r is provided with non-essential	loads	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	ations
Engineering Evaluation ID Revision	ENGDOC, DOEJ-SM-03-0415-001 Applicability of NFPA 80 Door Closer Requirements	
Inactive	No	
Functionally Equivalent	Νο	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This evaluation addresses a select number of fire doors that occasionally may not automatically latch closed due to "abnormal air pressure".	
	Bases for Acceptability:	
	The specific fire doors cited are PA101, 201 and 497. The evaluation justifies the door latching deviation by taking credit for plant staff that ensure all fire doo are closed after entry or egress.	ors
Engineering Evaluation ID Revision	ENGDOC, SM-97-1561-001 Fire Barrier Penetration Seal Limiting Design Parameter Evaluation	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	Evaluate various penetration seals which, as a result of plant walkdowns of as built configurations, exhibited one or more Limiting Design Parameters (LDPs) which were outside limits previously established via qualification test reviews.)
	Bases for Acceptability:	
	The basis of the evaluation was to establish the acceptability of the field established configurations through either:	
	 Utilizing engineering judgment based on additional reviews of test reports to justify the LDP in question; Refinement of field judgments through review of design drawing/documentation; or Establishing additional technical bases which allowed reapplication of acceptance criteria for LDPs. 	

.



Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3			
Inactive	No			
Functionally Equivalent	No			
Adequate for the Hazard	Yes			
Summary	Purpose:			
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.			
	Bases for Acceptability:			
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,			
	 The construction of the boundary and the potential issue with the element in question was described, 			
	• The fire hazards and fire protection features on both sides of the barrier were described,			

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based	Approach - Fire Risk E	Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions
Required FP System(s)/Feature(s) Description	Required By	Comments
Detection	2A-100	Risk Criteria	Required to meet risk criteria.
Detection	2A-100	DID Criteria	Required to meet DID criteria.
Detection	2A-100 [2103, 2104, 2125 and 2183]	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-100 [2103, 2104, 2125 and 2183]	Risk Criteria	Required to meet risk criteria.
Detection	2A-100 [2103, 2104, 2125 and 2183]	DID Criteria	Required to meet DID criteria.
Detection	2A-101	Risk Criteria	Required to meet risk criteria.
Detection	2A-101	DID Criteria	Required to meet DID criteria.
Detection	2A-102	Risk Criteria	Required to meet risk criteria.
Detection	2A-102	DID Criteria	Required to meet DID criteria.
Detection	2A-45	Risk Criteria	Required to meet risk criteria.
Detection	2A-45	DID Criteria	Required to meet DID criteria.
Nater Suppression	2A-45	DID Criteria	Required to meet DID criteria.
Passive	Plant staff Training	EEEE/LA	Plant Staff Training is required to address a door closure.
Passive	Restricted transient controls	EEEE/LA	Required to support fire area boundary evaluations.
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to main risk criteria.
Modifications		Risk Criteria	Modification to replace trip device in panel Q2R42B0001A, breakers LA13, LA20; Q2R42B0001B, breakers LB14.

Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-001
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions and the installed detection/suppression systems and modification(s), the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR ID	U2-2-001-ASSO-001			
VFDR	Q2R15A0006:ENERGIZED:ENERGIZED-SUT2A, 4160V SWITCHGEAR BUS 2F - A fault on the impacted power cable coupled with a loss of control power the associated load breaker could result in the credited Bus 2F supply breaker tripping. This would result in a loss of AC power to Switchgear 2F. This is an associated circuits common power supply issue and needs to be positioned accordingly. Failure to establish vital AC power challenges various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-ASSO-002			
VFDR	Q2R15A0007:ENERGIZED:ENERGIZED-SUT2B, 4160V SWITCHGEAR BUS 2G - A fault on the impacted power cable coupled with a loss of control power to the associated load breaker could result in the credited Bus 2G supply breaker tripping. This would result in a loss of AC power to Switchgear 2G. This is an associated circuits common power supply issue and needs to be positioned accordingly. Failure to establish vital AC power challenges various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-HVAC-001			
VFDR	Q2R42B0001A:ENERGIZED:ENERGIZED-BC2C, 125V DC BUS 2A - This component, DC BUS 2A, requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-HVAC-002			
Fire Safety Analysis Data I	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1357 of 2			





Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2R42E0001B:ENERGIZED:ENERGIZED, BATTERY CHARGER 2B - This component, Battery Charger 2B, requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-HVAC-003			
VFDR	Q2R15A0007:ENERGIZED:ENERGIZED-SUT2A, 4160V SWITCHGEAR BUS 2G - This component, Switchgear 2G, requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			
VFDR ID	U2-2-001-HVAC-004			
VFDR	Q2N23P0001A:OFF:ON/OFF, 2A MDAFW PUMP - This component, AFW Pump 2A, requires HVAC support to remain functional. The Auxiliary Feed water Pump is required to supply feed water to the Steam Generators in order to remove decay heat. A loss of the associated Pump Room Coolers due to fire induce circuit failure could prevent the availability of Pump 2A. Failure to ensure the availability of Pump 2A challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovactions(s) are required to meet applicable risk criteria.			
VFDR ID	U2-2-001-HVAC-005			

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 2B - This component, Battery 2B, requires HVAC support to remain functional. Failure to establish HVAC to support this electrical component will prevent the establishment of all Vital Power. This failure poses a challenge to HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-001-IA-001
VFDR	Q2B31V0061:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. The Pressurizer Power Relief Valve is required to cycle in order to de-pressurize the RCS System. A loss of instrument air will result in the valve failing in the closed position. An inability to cycle the Pressurizer Power Relief Valve challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-001-IA-002
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A loss of instrument air could result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-001-IA-003
Fire Safety Analysis Data M	Aanager (4.1) Farley Run: 08/18/2012 22:09 Page: 1359 of 243



Fire Area ID: Compliance Basis:	VF VFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Atmospheric relief on the secondary side is necessary in order to achieve a controlled cool down rate. Failure to modulate the SG 2A ARV due to a loss of instrument air would cause the valve to fail closed, thereby isolating the secondary side. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-SEP-001			
VFDR	N2B21TR0413:AVAILABLE-TE413:AVAILABLE-TE413, RCS HOT LEG TEMPERATURE RECORDER TR-413 - Decay Heat removal via SG 2A is desired in this Fire Area. RCS Temperature Indication at the control room (or local control center) is required in order to remove decay heat through the steam generators. Fire induced circuit failure to TR0413 could prevent RCS Loop 1 Temperature indication from being available at the control room. These failures challenge the Decay Heat Removal Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			
VFDR ID	U2-2-001-SEP-002			
VFDR	Q2B41P0001C:ON:OFF, RCP 2C - The Reactor Coolant pumps are required to remain off in order to maintain natural circulation cool down conditions. Spurious start of the Reactor Coolant Pump due to fire induced hot shorts could lead to an uncontrolled cool down rate. Failure to secure the Reactor Coolani Pumps challenge the RCS Inventory Control/Pressure Control Performance Criteria. This condition represents a variance from the deterministic requirements Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-SEP-003			

Fire Safety Analysis Data Manager (4.1)

.

~

Fire Area ID: Compliance Basis:	1 - Aux Building A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2E13PT0950:AVAILABLE:AVAILABLE, CONTAINMENT PRESSURE TRANSMITTER PROTECTION CHANNEL I - Fire induced circuit failure of PT950 could initiate a spurious CSAS signal, by initiating a loss of containment pressure signal. A spurious CSAS Signal could result in spurious start of the containment spray pumps, thus drawing suction from the RWST, and depleting its inventory. Alternatively the spurious signal could open the discharge path for the pump. A loss of RWST inventory challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-SEP-004			
VFDR	Q2E13PT0951:AVAILABLE:AVAILABLE, CONTAINMENT PRESSURE TRANSMITTER PROTECTION CHANNEL II - Fire induced circuit failure of PT951 could initiate a spurious CSAS and/or SIAS signal, by initiating a loss of containment pressure signal. A spurious CSAS Signal could result in spurious start of the containment spray pumps, thus drawing suction from the RWST, and depleting its inventory. Alternatively the spurious signal could open the discharge path for the pump. A spurious SIAS Signal could result in spurious isolation of the charging injection path. Failure to establish a charging path or loss of RWST inventory challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-SEP-005			
VFDR	Q2E13PT0952:AVAILABLE:AVAILABLE, CONTAINMENT PRESSURE TRANSMITTER PROTECTION CHANNEL III - Fire induced circuit failure of PT952 could initiate a spurious CSAS and/or SIAS signal, by initiating a loss of containment pressure signal. A spurious CSAS Signal could result in spurious start of the containment spray pumps, thus drawing suction from the RWST, and depleting its inventory. Alternatively the spurious signal could open the discharge path for the pump. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, and a failure to establish a charging injection path. Failure to establish a charging path or loss of RWST inventory challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1361 of 2430

Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U2-2-001-SEP-006		
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. Fire induced circuit failure could result in this valve failing in the open position. Failure the throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-001-SEP-007		
VFDR	Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - The Volume Control Tank Outlet Isolation valves must initially remain open to establish a chargir lineup before suction is re-aligned to the RWST. Fire induced circuit failure to the outlet valves (V376A and V376B) could result in the valves spuriously clos and isolating the VCT before swap over can be established. Both valves must remain open. This failure challenges the RCS Inventory Control Nuclear Safe Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-001-SEP-008		
VFDR	Q2E21V0376B:OPEN:CLOSED, VCT OUTLET ISOLATION - The Volume Control Tank Outlet Isolation valves must close in order to align charging suction to the RWST. Fire induced circuit failure to valve Q2E21V0376B could result in the valve failing to closed (it is directly in the fire area too). Failure to isolate the VCT would impact the credited charging lineup. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-001-SEP-009		
Fire Safety Analysis Data	Manager (4.1) Run: 08/18/2012 22:09 Page: 1362 of 243		

,- -

Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - The Volume Control Tank Outlet Isolation valves must initially remain open to establish a charging lineup before suction is re-aligned to the RWST. Fire induced circuit failure to the outlet valves (V376A and V376B) could result in the valves spuriously closing and isolating the VCT before swap over can be established. Both valves must remain open. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-SEP-010			
VFDR	Q2N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric relief must be isolated on the secondary side initially. Spurious opening of the Atmospheric Relief Valve PV3371A (SG 2A) could result from fire induced circuit failure. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-SEP-011			
VFDR	Q2N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric relief must be isolated on the secondary side initially. Spurious opening of the Atmospheric Relief Valve PV3371B (SG 2B) could result from fire induced circuit failure. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-SEP-012			

.

Attachment C

Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric relief must be isolated on the secondary side initially. Spurious opening the Atmospheric Relief Valve PV3371C (SG 2C) could result from fire induced circuit failure. This failure challenges the Decay Heat Removal Nuclear Safet Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-001-SEP-013			
VFDR	Q2N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - The TDAFW Pump is not credited for use in this fire area. Fire induced circuit failure to HV3235B could result in the valve spuriously opening, and thus spurious steam admission to the TDAFW Pump. Spurious start of the pump could result in an overcooling condition to the respective steam generator, and pose a challenge to the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
/FDR ID	U2-2-001-SEP-014			
/FDR	Q2E21V0336A:CLOSED:OPEN, RWST TO CHARGING PUMP - Valve LCV-0115B provides suction to the charging pumps from the RWST. Fire induced cab damage that would prevent opening of the valve would pose a challenge to the RCS Reactivity Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
	U2-2-001-SEP-015			

.

Fire Area ID: Compliance Basis:	2-001 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Base	Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		VFDRs
VFDR	cool down rate. Failure to modulate the SG 2A This failure challenges the Decay Heat Remov	ULATE, MAIN STEAM ATMOS RELIEF - Atmospheric relief on the secondary side is necessary in order to achieve a controlled ate the SG 2A ARV due to fire induced circuit failure would cause the valve to fail closed, thereby isolating the secondary side. / Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section		
Disposition		sing the performance-based approach of NFPA 8 nargin criteria were satisfied without further action.		rmined that
VFDR ID	U2-2-001-SEP-016			
VFDR	Q2P15SV3765:CLOSED:OPEN/CLOSED, RCS HOT LEG SAMPLE ISOLATION SOLENOID - The Sampling System must remain isolated at all times in order to ensure that RCS Inventory losses do not inadvertently occur. Spurious opening of the RCS Sample Isolation Valves SV3333 or SV3765 due to fire induced circuit failure could result in an inadvertent diversion flow path for RCS Inventory. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance u applicable risk, defense-in-depth, and safety n	ising the performance-based approach of NFPA 8 nargin criteria were satisfied without further action	05, Section 4.2.4. A fire risk evaluation deter (VFDR not modeled in Fire PRA).	rmined that
VFDR ID	U2-2-001-SEP-017			
VFDR	Q2P15SV3104:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM SAMPLE ISOLATION - The Sampling System must remain isolated at all times in order to ensure that RCS Inventory losses do not inadvertently occur. Spurious opening of the Pressurizer Sample Gas Isolation Valves SV31043 or SV3331 due to fire induced circuit failure could result in an inadvertent diversion flow path for RCS Inventory. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			SV3331 due to fire Nuclear Safety
Disposition		sing the performance-based approach of NFPA 8 nargin criteria were satisfied without further action		rmined that
VFDR ID	U2-2-001-SEP-018		· · · · · · · · · · · · · · · · · · ·	
Fire Safety Analysis Data N	lanager (4.1)	Farley	Run: 08/18/2012 22:09	Page: 1365 of 2430



Fire Area ID: 2-001 - Aux Building Compliance Basis: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2P15SV3103:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID SAMPLE ISOLATION - The Sampling System must remain isolated at all times in order to ensure that RCS Inventory losses do not inadvertently occur. Spurious opening of the Pressurizer Sample Liquid Isolation Valves SV3103 or SV3332 due to fire induced circuit failure could result in an inadvertent diversion flow path for RCS Inventory. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-001-SEP-019	
VFDR	Q2E13PT0953:AVAILABLE:AVAILABLE, CONTAINMENT PRESSURE TRANSMITTER PROTECTION CHANNEL IV - Fire induced circuit failure of PT953 could initiate a spurious CSAS and/or SIAS signal, by initiating a loss of containment pressure signal. A spurious CSAS Signal could result in spurious start of the containment spray pumps, thus drawing suction from the RWST, and depleting its inventory. Alternatively the spurious signal could open the discharge p for the pump. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, and a failure t establish a charging injection path. Failure to establish a charging path or loss of RWST inventory challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Iss Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	



Fire Area ID: Compliance Basis:	2-004-U1 - Aux Building Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
2151-U1	2151 Waste Gas Decay Tank Rooms	
2152-U1	2152 Valve Compartment Room	
2153-U1	2153 Waste Gas Compressor Room	
2154-U1	2154 Waste Evaporator Steam Generator Room	
2154A-U1	2154A Valve Compartment Room	
2155-U1	2155 Passageway to Unit 1	
2156-U1	2156 Holdup Tank Room	
2157-U1	2157 Holdup Tank Room	
2158-U1	2158 Holdup Tank Room	
2159-U1	2159 Recycle Evaporator Feed Pump Room	
2160-U1	2160 Hatch Area	
2161-U1	2161 Corridor	
2162-U1	2162 Hallway	
2163-U1	2163 WDS Control Panel Room	
2164-U1	2164 Storage Room	
2165-U1	2165 Waste Gas Decay Tank Room	
2166-U1	2166 Waste Gas Decay Tank Room	
2168-U1	2168 Chemical Drain Tank Room	
2170-U1	2170 Letdown Heat Exchanger Room	
2175-U1	2175 Hallway	
2176-U1	2176 Secondary Spent-Resin Storage Tank Room	
2177-U1	2177 Pump Room	
2178-U1	2178 Filter Room	
2180-U1	2180 Recycle Evaporator Steam Generator Room	
2186-U1	2186 Boric Acid Area	
2187-U1	2187 Hydro Test Pump Room	
2188-U1	2188 Boric Acid Tank Area	
2203-U1	2203 Waste Condenser Tanks and Pump Room	
2204-U1	2204 Waste Evaporator Package Room	
2205-U1	2205 Passageway to Unit 1	
2206-U1	2206 Heat Exchanger Room	
2207-U1	2207 Hatch Area	
2208-U1	2208 Corridor	
2209-U1	2209 Hallway	

.

Fire Area ID: 2-004-U1 - Aux Building Compliance Basis: Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic ass Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach		Fire Area Definition
Fire Zone ID	Description	
2215-U1	2215 Duct and Pipe Chase	
2216-U1	2216 Valve Compartments Area	
2217-U1	2217 Volume Control Tank Room	
2218-U1	2218 Chiller Unit Room	
2219-U1	2219 Pipe Chase	
2220-U1	2220 Valve Compartment Room	
2221-U1	2221 Primary Spent-Resin Storage Tank Room	
2222-U1	2222 Corridor	
2230-U1	2230 Recycle Evaporator Package Room	
2231-U1	2231 Sluice Pump Room	
2232-U1	2232 Sluice Filter Room	
2237-U1	2237 Corridor	
2238-U1	2238 Cask Storage Area	
2239-U1	2239 Transfer Canal	
2240-U1	2240 Spent-Fuel Pool Room	
2253-U1	2253 Valve Compartment	
2301-U1	2301 Seal Water Filter Room	
2302-U1	2302 Recycle Evaporator Feed Filter Room	
2303-U1	2303 Reactor Coolant Filter Room	
2304-U1	2304 Waste Monitor	
2305-U1	2305 Seal Injection Filter Room	
2306-U1	2306 Recycle Evaporator Feed Demineralizer Room	
2307-U1	2307 Valve Compartment Room	
2308-U1	2308 Waste Condensate and Monitor Tank Demineralizer Room	
2309-U1	2309 Hatch Area	
2310-U1	2310 Valve Compartment Room	
2311-U1	2311 Recycle Evaporator Concentrates Filter Room	
2312-U1	2312 Corridor	
2313-U1	2313 Floor Drain and Laundry Tank Filter Room	
2314-U1	2314 Waste Evaporator Feed Filter Room	
2315-U1	2315 Recycle Waste Condenser Filter Room	
2316-U1	2316 Passageway to Unit 1	
2321-U1	2321 Sample Panel Room	
2322-U1	2322 Hallway	

Fire Area ID: Compliance Basis:	2-004-U1 - Aux Building Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
2323-U1	2323 Sample Room	
2324-U1	2324 Primary Chemistry Lab	
2325-U1	2325 Counting Room/Spectro-photometer Lab	
2326-U1	2326 Clean Storage Room	
2327-U1	2327 Valve Access Area	
2328-U1	2328 BTR Demineralizer Room	
2329-U1	2329 Pipe Tunnel	
2330-U1	2330 Chiller Surge Tanks Pump Room	
2331-U1	2331 Valve Access Area	
2332-U1	2332 MCC 1A/2A Area	
2340-U1	2340 Demineralizer Compartment	
2341-U1	2341 Pipe Chase	
2342-U1	2342 Spent-Fuel Pool Pump Room	
2348-U1	2348 Cask Wash Area	
2351-U1	2351 Chiller Pump and Surge Tank Room	
2402-U1	2402 Passage to Unit 1	
2403-U1	2403 Respirator Issue Room/Combustible Storage Room	
2405-U1	2405 Hatch Room	к.
2406-U1	2406 Tool Room	
2408-U1	2408 Hallway	
2409-U1	2409 Hallway	
2410A-U1	2410A 600-V Load Center	
2418-U1	2418 Auxiliary Building and Containment Purge Vent Equipment Room	
2419-U1	2419 Demineralizer Hatch Area	
2422-U1	2422 Corridor	
2423-U1	2423 Valve Compartment	
2424-U1	2424 Demineralizer Compartments	
·2425-U1	2425 Demineralizer Compartments	
2426-U1	2426 Demineralizer Compartments	
2427-U1	2427 Demineralizer Compartments	
2429-U1	2429 Containment Purge Air Equipment Room	
2431-U1	2431 Duct/Pipe Chase	
2445-U1	2445 Spent-Fuel Pool Heat Exchanger Room	
2446-U1	2446 Hallway	



Fire Area ID: Compliance Basis:	2-004-U1 - Aux Building Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
2448-U1	2448 SFPC Pump Room	
2449-U1	2449 Demineralizer Room	
2450-U1	2450 Valve Compartment	
2451-U1	2451 Filter Room	
2467-U1	2467 SFP Heat Exchanger Room	
2478-U1	2478 Motor Control Center Room	
2504-U1	2504 Stair No. 6, Floor El. 184'-0"	
2505-U1	2505 Spent-Fuel Pool Vent Equipment Room	,
2604-U1	2604 Passage	
2605-U1	2605 Blowdown Pumps and Surge Tank Room	
2606-U1	2606 Filter Room	
2607-U1	2607 Filter Room	
2608-U1	2608 Blowdown Heat Exchanger Room	
2609-U1	2609 Storage Room	
2610-U1	2610 Valve Compartment Room	

Compliance Basis:		Building 05, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 05, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Tri	р	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Su Conditions	ubcritical	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.		
3.1 RCS Inventory Control - RCS M	Makeup	RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Paths	Eeakage	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP S	Seal Integrity	Maintain RCP Seal Integrity - RĈP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressu	ure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		





Fire Area ID: Compliance Basis:		ux Building 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 805, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
4.2 RCS Pressure Control - Pos Control	itive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal		Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.		
6 Process Monitoring		1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored.		
7.1 Vital Auxiliaries – Electrical		1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries – Service W	/ater	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Compone Water	nt Cooling	Train A/Train B component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVAC		Performance-based approach Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Area ID:	2-004-U1 - Aux Building	Performance Goals
Compliance Basis:	Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
	Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.









Fire Area ID: Compliance Basis:	2-004-U1 - Aux Building Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	The fire areas, fire zones and rooms on both sides of the barrier were identified,
	- The construction of the boundary and the potential issue with the element in question was described

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.



Fire Area ID: Compliance Basis:	2-004-U1 - Aux Building Unit 1: NFPA 805, Section 4.2.4.2 Performance- Unit 2: NFPA 805, Section 4.2.3 Deterministic A		Required Fire Protection Systems and Features Risk Evaluation with simplifying deterministic assumptions
Required FP System(s)/Feature(s) Description	Required By	Comments
Detection	2A-101	Risk Criteria	Required to meet risk criteria.
Detection	2A-101 [2170, 2177]	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-101 [2170, 2177]	Risk Criteria	Required to meet risk criteria.
Detection	2A-102 [2151, 2152, 2153, 2154, 2165, 2166]	Risk Criteria	Required to meet risk criteria
Detection	2A-103 [2188,2216,2217,2218,2220,2230,22 31,2232,2237]	Risk Criteria	Required to support risk criteria.
Detection	2A-104 [2156, 2157,2158,2203,2204,2206,2253]	Risk Criteria	Required to meet risk criteria.
Detection	2A-105	Risk Criteria	Required to meet risk criteria.
Detection	2A-105 [2604]	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-105 [2604]	Risk Criteria	Required to support risk criteria.
Detection	2A-107	Risk Criteria	Required to meet risk criteria.
Detection	2A-107 [2422]	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-107 [2422]	Risk Criteria	Required to support risk criteria.
Detection	2A-108	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-108	Risk Criteria	Required to meet risk criteria.
Detection	2A-109 [2504,2505]	Risk Criteria	Required to meet risk criteria.
Detection	2A-112	Risk Criteria	Required to meet risk criteria.
Detection	2A-118	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-118	Risk Criteria	Required to support risk criteria.
Detection	2A-25	Risk Criteria	Required to meet risk criteria.
Detection	2A-25 [2155, 2160, 2161, 2162, 2163]	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-25 [2155, 2160, 2161, 2162, 2163]	Risk Criteria	Required to meet risk criteria.
Detection	2A-35 [2205]	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-35 [2207, 2209]	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-35 [2207, 2209]	Risk Criteria	Required to support risk criteria.
Detection	2A-35 [2208, 2222]	Risk Criteria	Required to meet risk criteria.
Detection	2A-48	Risk Criteria	Required to meet risk criteria.
Detection	2A-48 [2309, 2312, 2316,2322]	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-48 [2309, 2312, 2316,2322]	Risk Criteria	Required to support risk criteria.
Detection	2A-49 [2321,2323,2324,2325,2326]	Risk Criteria	Required to meet risk criteria.
Detection	2A-57	Risk Criteria	Required to meet risk criteria.

Fire Safety Analysis Data Manager (4.1)







Fire Area ID: Compliance Basis:

2-004-U1 - Aux Building Required Fire Protection Systems and Features Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach

Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-57 [2408]	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-57 [2408]	Risk Criteria	Required to meet risk criteria.
Detection	2A-75	Risk Criteria	Required to meet risk criteria.
Detection	2A-75 [2405,2406]	EEEE/LA	Required to support fire area boundary evaluations.
Detection	2A-75 [2405,2406]	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	2A-50	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-112	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-118	EEEE/LA	Required to support fire area boundary evaluations.
Water Suppression	2A-118	Risk Criteria	Required to support risk criteria.
Water Suppression	2A-25 [2155]	EEEE/LA	Required to support fire area boundary evaluations.
Water Suppression	2A-25 [2160, 2161, 2162,2163]	EEEE/LA	Required to support fire area boundary evaluations.
Water Suppression	2A-25 [2160, 2161, 2162,2163]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-35	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-35 [2207,2209]	EEEE/LA	Required to support fire area boundary evaluations.
Water Suppression	2A-35 [2207,2209]	Risk Criteria	 Required to support risk criteria.
Water Suppression	2A-48	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-48 [2316,2322]	EEEE/LA	Required to support fire area boundary evaluations.
Water Suppression	2A-48 [2316,2322]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-57	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-75	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-75 [2405,2406]	EEEE/LA	Required to support fire area boundary evaluations.
Water Suppression	2A-75 [2405,2406]	Risk Criteria	Required to meet risk criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support fire area boundary evaluations.

Fire Area ID: Compliance Basis:	2-004-U1 - Aux Building Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 2-004-U1
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the modification to seal MCCs and the installed detection and suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Safety Analysis Data Manager (4.1)





Fire Area ID: Compliance Basis:	2-004-U1 - Aux Building Unit 1: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 2: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U1-2-004-SEP-001
VFDR	QSR17B0006:ENERGIZED:ENERGIZED-U1, MOTOR CONTROL CENTER 1F - QSR17B0006 - Motor Control Center 1F. The MCC is normally energized, required energized to provide control room HVAC. Fire induced cable damage can disable MCC, and a challenge to vital auxiliaries support for primary control station habitability for all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).

.

Fire Zone ID Description 2161-L2 2161 Waste Gao Decay Tank Rooms 2163-L2 2153 Waste Gao Compressor Room 2163-L2 2153 Waste Gao Compressor Room 2163-L2 2154 Waste Exaporation Steam Generator Room 2164-L2 2154 Waste Exaporator Steam Generator Room 2154-L2 2154 Waste Exaporator Steam Generator Room 2154-L2 2156 Hodgu Tank Room 2158-L2 2156 Hodgu Tank Room 2164-L2 2161 Comitor 2164-L2 2161 Comitor 2164-L2 2161 Comitor 2164-L2 2163 WDS Control Panol Room 2164-L2 2163 WDS Control Panol Room 2164-L2 2163 Waste Gas Decay Tank Room 2164-L2 2164 Waste Exaporator Steam Generator Room	Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
2152-U2 2152 Valke Compartment Room 2154-U2 2154 Waste Exporator Steam Generator Room 2154-U2 2154 Valke Compartment Room 2154-U2 2154 Valke Compartment Room 2154-U2 2155 Holdup Tank Room 2154-U2 2155 Holdup Tank Room 2154-U2 2155 Holdup Tank Room 2154-U2 2156 Holdup Tank Room 2169-U2 2166 Waste Gas Decay Tank Room 2169-U2 2166 Waste Gas Decay Tank Room 2169-U2 2166 Waste Gas Decay Tank Room 2170-U2 2176 Lotdown Heat Excharger Room 2170-U2 2176 Kalway 2176-U2 2176 Secondary Spent-Resin Storage Tank Room 2177-U2 2177 Fulloway 2176-U2 2176 Room 2177-U2 2179 Holdup Tank Ace 2180-U2 2108 Roct Acid Area 2180-U2 2108 Roct Acid Area	Fire Zone ID	Description	
2153-U2 2153 Waste Gas Compressor Room 2154-U2 2154 Waste Evaporator Steam Generator Room 2154-U2 2154 Waste Evaporator Steam Generator Room 2155-U2 2155 Hadup Tank Room 2155-U2 2156 Hadup Tank Room 2157-U2 2157 Hadup Tank Room 2157-U2 2157 Hadup Tank Room 2157-U2 2156 Rocyte Evaporator Feed Pump Room 2159-U2 2156 Rocyte Evaporator Feed Pump Room 2169-U2 2160 Hadx Area 2169-U2 2160 Hadx Boom 2169-U2 2160 Kaste Gas Decay Tank Room 2169-U2 2166 Komical Drain Tank Room 2169-U2 2166 Komical Drain Tank Room 2169-U2 2160 Komical Drain Tank Room 2170-U2 2170 Ledown Haet Exchanger Room 2170-U2 2170 Ledown Haet Exchanger Room 2170-U2 2170 Hadware	2151-U2	2151 Waste Gas Decay Tank Rooms	
2154 U2 2154 Waike Expandence Room 2155 A4 Valve Compartment Room 2155 Valve Compartment Room 2155 U2 2155 Passageway to Unit 1 2156 V2 2155 Valve Compartment Room 2157 V2 2157 Valve Trank Room 2157 V2 2158 Valve Comparton Feed Pump Room . 2158 V2 2158 Valve Expandence Pump Room . 2159 V2 2168 Valve Trank Room 2160 Valve Expandence Pump Room . 2160 Valve Expandence Pump Room . 2161 Valve Trank Room 2161 Valve Trank Room 2162 Valve Expandence Pump Room . 2160 Valve Expandence Pump Room . 2163 Valve Expandence Pump Room . 2160 Valve Expandence Pump Room . 2164 Valve Trank Room . 2160 Valve Expandence Pump Room . 2164 Valve Expandence Pump Room . 2160 Valve Expandence Pump Room . 2164 Valve Expandence Pump Room . 2160 Valve Expandence Pump Room . 2164 Valve Expandence Pump Room . 2160 Valve Expandence Pump Room . 2164 Valve Expandence Pump Room . 2160 Valve Expandence Pump Room . 2176 Valve Expandence Pump Room . 2160 Valve Expandence Pump Room . 2176 Valve Expandence Pump Room . 2176 Valve . 2177 Valve Room . 2177 Valve Room . 2176 Valve Expandence Pump Room . 2180 Valve Expandence Pump Room . 2186 Valve Expandence Room . 2180 Valve Expand	2152-U2	2152 Valve Compartment Room	
2164-U2 2165 Vassageway to Unit 1 2165-U2 2165 Vassageway to Unit 1 2165-U2 2165 Holdug Tank Room 2167-U2 2155 Holdug Tank Room 2167-U2 2155 Holdug Tank Room 2169-U2 2155 Holdug Tank Room 2169-U2 2156 Nedug Tank Room 2160-U2 2160 Holdu Tank Room 2160-U2 2160 Holdu Tank Room 2160-U2 2160 Nethore 2161-U2 2161 Corridor 2162-U2 2163 NDS Control Panel Room 2163-U2 2163 VDS Control Panel Room 2164-U2 2164 Storage Room 2165-U2 2165 Washe Gas Decay Tank Room 2165-U2 2165 Washe Gas Decay Tank Room 2165-U2 2166 Washe Gas Decay Tank Room 2165-U2 2166 Washe Gas Decay Tank Room 2170-U2 2170 Ledtown Heat Exchanger Room 2170-U2 2170 Ledtown Heat Exchanger Room 2170-U2 2170 Fump Room 2170-U2 2176 Holway 2170-U2 2176 Holway 2170-U2 2177 Pump Room 2170-U2 2180 Recycle Exaporator Staam Generator Room 2180-U2 2180 Bork Acid Area 2180-U2 2180 Bork Acid Tank Area 2180-U2 2180 Bork Acid Tank Area	2153-U2	2153 Waste Gas Compressor Room	
2155-U2 2155 Passageway to Unit 1 2156-U2 2156 Holdup Tank Room 2157-U2 2157 Holdup Tank Room 2158-U2 2158 Holdup Tank Room 2159-U2 2159 Recycle Evaporator Feed Pump Room 2169-U2 2160 Hatch Area 2161-U2 2160 Hatch Area 2161-U2 2160 Hatch Area 2161-U2 2160 Hatch Area 2162-U2 2161 Corridor 2163-U2 2163 WDS Control Panel Room 2164-U2 2166 Waste Gas Decay Tank Room 2164-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2160-U2 2170 Leidown Healt Exchanger Room 2176-U2 2170 Leidown Healt Exchanger Room 2176-U2 2176 Halway 2176-U2 2177 Pump Room 2177-U2 2177 Pump Room 2176-U2 2178 Halway 2176-U2 2180 Recycle Evaporator Steam Generator Room 2176-U2 2180 Recycle Evaporator Steam Generator Room 2176-U2 2178 Halway 2180-U2 2180 Recycle Evaporator Steam Generator	2154-U2	2154 Waste Evaporator Steam Generator Room	
2166-U2 2166 Holdup Tank Room 2167-U2 2167 Holdup Tank Room 2168-U2 2158 Holdup Tank Room 2169-U2 2158 Holdup Tank Room 2169-U2 2158 Holdup Tank Room 2160-U2 2160 Hatch Area 2161-U2 2161 Corridor 2162-U2 2162 Halway 2162-U2 2163 VDS Control Panel Room 2162-U2 2164 Storage Room 2164-U2 2164 Storage Room 2165-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2168-U2 2166 Waste Gas Decay Tank Room 2168-U2 2166 Waste Gas Decay Tank Room 2169-U2 2166 Waste Gas Decay Tank Room 2170-U2 2176 Ledtown Heat Exchanger Room 2176-U2 2176 Barkesin Storage Tank Room 2176-U2 2176 Storady Spent-Resin Storage Tank Room 2178-U2 2178 Filter Room <td>2154A-U2</td> <td>2154A Valve Compartment Room</td> <td></td>	2154A-U2	2154A Valve Compartment Room	
2157-U2 2157 Holdu Tank Room 2159-U2 2158 Holdu Tank Room 2159-U2 2158 Holdu Tank Room 2160-U2 2160 Hatch Area 2160-U2 2160 Hatch Area 2161-U2 2160 Hatch Area 2161-U2 2160 Torridor 2162-U2 2162 Hallway 2163-U2 2163 Korage Room 2164-U2 2164 Korage Room 2164-U2 2165 Waste Gas Decay Tank Room 2166-U2 2166 Korage Room 2166-U2 2166 Korage Room 2169-U2 2166 Korage Room 2169-U2 2166 Korage Room 2169-U2 2166 Korage Room 2169-U2 2166 Korage Room 2170-U2 2170 Letdown Heat Exchanger Room 2170-U2 2170 Eldown Heat Exchanger Room 2177-U2 2177 Fulm Room 2177-U2 2177 Fulm Room 2178-U2 2168 Boric Acid Area 2188-U2 188 Boric Acid Tank Area 2188-U2 2168 Boric Acid Tank Area 2188-U2 2178 Hydro Test Pump Room 2188-U2 2188 Boric Acid Tank Area 203-U2 <td>2155-U2</td> <td>2155 Passageway to Unit 1</td> <td></td>	2155-U2	2155 Passageway to Unit 1	
2158-U2 2158 Holdup Tank Room 2159-U2 2159 Recycle Evaporator Feed Pump Room 2160-U2 2160 Hatin Area 2161-U2 2161 Corridor 2161-U2 2161 Corridor 2163-U2 2163 WDS Control Panel Room 2164-U2 2164 Storage Room 2164-U2 2166 Waste Gas Decay Tank Room 2168-U2 2166 Waste Gas Decay Tank Room 2170-U2 2170 Leddown Heat Exchanger Room 2176-U2 2170 Eudown Heat Exchanger Room 2176-U2 2170 Faliway 2176-U2 2176 Secondary Spent-Resin Storage Tank Room 2176-U2 2177 Pump Room 2176-U2 2178 Filter Room 2178-U2 2178 Filter Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2188 Boric Acid Tank Area 200-U2 203 Waste Condenser Tanks and Pump Room 201-U2 203 Waste Condenser Tanks and Pump Room	2156-U2	2156 Holdup Tank Room	
2159-U2 2159 Recycle Evaporator Feed Pump Room 2160-U2 2169 Hatch Area 2161-U2 2161 Corridor 2162-U2 2162 Hallway 2163-U2 2162 Malway 2163-U2 2163 WDS Control Panel Room 2164-U2 2164 Storage Room 2165-U2 2165 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2167-U2 2170 Letdown Heat Exchanger Room 2170-U2 2170 Letdown Heat Exchanger Room 2170-U2 2170 Letdown Heat Exchanger Tank Room 2170-U2 2177 Pump Room 2177-U2 2177 Pump Room 2177-U2 2177 Pump Room 2178-U2 2188 Boric Acid Area 2188-U2 2188 Boric Acid Tank Area 2188-U2 2188 Boric Acid Tank Area 203-U2 203 Waste Condenser Tanks and Pump Room 2188-U2 2188 Boric Acid Tank Area 203-U2 204 Waste Evaporator Package Room 203-U2 205 Pasageway to Uni 1 206-U2 206 Heat Exchanger Room 206-U2 206 Heat Exchanger Room <td>2157-U2</td> <td>2157 Holdup Tank Room</td> <td></td>	2157-U2	2157 Holdup Tank Room	
2160-U2 2160 Hatch Area 2161-U2 2161 Corridor 2162-U2 2162 Hilway 2163-U2 2163 WDS Control Panel Room 2164-U2 2164 Storage Room 2164-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Chemical Drain Tank Room 2170-U2 2170 Letdow Heat Exchanger Room 2170-U2 2170 Letdow Heat Exchanger Room 2176-U2 2176 Secondary Spent-Resin Storage Tank Room 2176-U2 2176 Secondary Spent-Resin Storage Tank Room 2176-U2 2177 Pump Room 2176-U2 2178 Flaimay 2176-U2 2179 Secondary Spent-Resin Storage Tank Room 2176-U2 2179 Flame Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Waste Condenser Tanks and Pump Room 2203-U2 2180 Waste Condenser Tanks and Pump Room 2203-U2 200 Waste Condenser Tanks and Pump Room 2204-U2 200 Waste Evaporator Package Room 2204	2158-U2	2158 Holdup Tank Room	
2161-U2 2161 Corridor 2162-U2 2164 Hallway 2163-U2 2163 WDS Control Panel Room 2164-U2 2163 WDS Control Panel Room 2164-U2 2164 Vatorage Room 2165-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2170-U2 2170 Letdown Heat Exchanger Room 2170-U2 2170 Letdown Heat Exchanger Room 2177-U2 2175 Hallway 2177-U2 2175 Hallway 2177-U2 2176 Secondary Spent-Resin Storage Tank Room 2177-U2 2177 File Room 2178-U2 2178 Filter Room 2178-U2 2178 Filter Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Rocycle Evaporator Steam Generator Room 2180-U2 2180 Boric Acid Area 2180-U2 2180 Boric Acid Tank Area 2180-U2 2180 Boric Acid Tank Area 2180-U2 2180 Boric Acid Tank Area 2203-U2 2203 Waste Condenser Tanks and Pump Room 2203-U2 2203 Waste Condenser Tanks and Pump Room	2159-U2	2159 Recycle Evaporator Feed Pump Room	
2162-U2 2162 Hallway 2163-U2 2163 WDS Control Panel Room 2164-U2 2164 Storage Room 2165-U2 2165 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2170-U2 2170 Leidown Heat Exchanger Room 2170-U2 2170 Leidown Heat Exchanger Room 2175-U2 2175 Hallway 2176-U2 2176 Secondary Spent-Resin Storage Tank Room 2177-U2 2177 Pump Room 2178-U2 2178 Secondary Spent-Resin Storage Tank Room 2178-U2 2178 Filter Room 2178-U2 2178 Secondary Spent-Resin Storage Tank Room 2178-U2 2178 Filter Room 2178-U2 2178 Filter Room 2178-U2 2188 Boric Acid Area 2180-U2 2188 Boric Acid Tank Area 2181-U2 2188 Boric Acid Tank Area 2182-U2 203 Waste Condenser Tanks and Pump Room 2205-U2 203 Waste Conden	2160-U2	2160 Hatch Area	
2163-U2 2163 WDS Control Panel Room 2164-U2 2164 Storage Room 2165-U2 2166 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2168-U2 2168 Chemical Drain Tank Room 2170-U2 2170 Letdown Heat Exchanger Room 2175-U2 2170 Letdown Heat Exchanger Room 2175-U2 2175 Hallway 2176-U2 2176 Seondary Spent-Resin Storage Tank Room 2177-U2 2177 Pump Room 2177-U2 2178 Filter Room 2178-U2 2178 Filter Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2181-U2 2188 Boric Acid Tark Area 2030-U2 208 Waste Condenser Tanks and Pump Room 2203-U2 203 Waste Condenser Tanks and Pump Room 2203-U2 203 Waste Evaporator Package Room 2205-U2 200 Heat Exchanger Ro	2161-U2	2161 Corridor	
2164-U2 2164 Storage Room 2165-U2 2165 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2168-U2 2168 Chemical Drain Tank Room 2170-U2 2170 Letdown Heat Exchanger Room 2177-U2 2175 Hallway 2177-U2 2175 Secondary Spent-Resin Storage Tank Room 2177-U2 2175 Secondary Spent-Resin Storage Tank Room 2177-U2 2178 Filter Room 2177-U2 2178 Filter Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Boric Acid Area 2180-U2 2180 Boric Acid Tank Area 2030-U2 203 Waste Condenser Tanks and Pump Room 2030-U2 204 Waste Evaporator Package Room 2040-U2 204 Waste Evaporator Package Room 205-U2 205 Passageway to Unit 1 206-U2 206 Heat Exchanger Room 207-U2 207 Hatch Area 207-U2 207 Hatch Area <td>2162-U2</td> <td>2162 Hallway</td> <td></td>	2162-U2	2162 Hallway	
2165-U2 2165 Waste Gas Decay Tank Room 2166-U2 2166 Waste Gas Decay Tank Room 2168-U2 2168 Chemical Drain Tank Room 2170-U2 2170 Letdown Heat Exchanger Room 2175-U2 2170 Letdown Heat Exchanger Room 2176-U2 2176 Secondary Spent-Resin Storage Tank Room 2177-U2 2177 Fump Room 2177-U2 2178 Filter Room 2178-U2 2178 Filter Room 2180-U2 2186 Boric Acid Area 2180-U2 2186 Boric Acid Area 2181-U2 2186 Boric Acid Tank Area 2181-U2 2187 Hydro Test Pump Room 2182-U2 2188 Boric Acid Tank Area 2182-U2 2188 Boric Acid Tank Area 2183-U2 2188 Boric Acid Tank Area 203-U2 200 Waste Condenser Tanks and Pump Room 203-U2 200 Waste Evaporator Package Room 203-U2 200 Waste Evaporator Package Room 204-U2 205 Passageway to Unit 1 205-U2 205 Passageway to Unit 1 206-U2 207 Hatch Area 207-U2 207 Batch Area 208-U2 208 Corridor 207-U2 209 Hall	2163-U2	2163 WDS Control Panel Room	
2166-U2 2166 Waste Gas Decay Tank Room 2168-U2 2168 Chemical Drain Tank Room 2170-U2 2170 Letdown Heat Exchanger Room 2175-U2 2175 Hallway 2176-U2 2175 Secondary Spent-Resin Storage Tank Room 2177-U2 2177 Pump Room 2178-U2 2178 Filter Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Boric Acid Area 2181-U2 2188 Boric Acid Tank Area 2188-U2 2188 Boric Acid Tank Area 2188-U2 2180 Boric Acid Tank Area 2203-U2 2203 Waste Condenser Tanks and Pump Room 2204-U2 2204 Waste Evaporator Package Room 2205-U2 2205 Passageway to Unit 1 2206-U2 2207 Hatch Area 2206-U2 2207 Hatch Area 2208-U2 2208 Corridor 2208-U2 2208 Corridor 2208-U2 2208 Corridor 2208-U2 2208 Corridor 2208-U2 2208 Hallway	2164-U2	2164 Storage Room	
2168-U2 2168 Chemical Drain Tank Room 2170-U2 2170 Letdown Heat Exchanger Room 2175-U2 2175 Hallway 2176-U2 2176 Secondary Spent-Resin Storage Tank Room 2170-U2 2177 Pump Room 2178-U2 2178 Filter Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Boric Acid Area 2180-U2 2180 Boric Acid Tank Area 2180-U2 2180 Boric Acid Tank Area 2180-U2 2180 Boric Acid Tank Area 2203-U2 2203 Waste Condenser Tanks and Pump Room 2204-U2 2204 Waste Evaporator Package Room 2204-U2 2205 Passageway to Unit 1 2206-U2 2205 Passageway to Unit 1 2206-U2 2207 Hatch Area 2208-U2 2208 Corridor 2208-U2 2208 Corridor 2208-U2 2208 Corridor 2208-U2 2208 Corridor 2209-U2 2208 Hallway	2165-U2	2165 Waste Gas Decay Tank Room	
2170-U2 2170 Letdown Heat Exchanger Room 2175-U2 2175 Hallway 2176-U2 2176 Secondary Spent-Resin Storage Tank Room 2177-U2 2177 Pump Room 2177-U2 2177 Fump Room 2178-U2 2178 Filter Room 2178-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2180 Boric Acid Area 2180-U2 2186 Boric Acid Area 2181-U2 2187 Hydro Test Pump Room 2182-U2 2188 Boric Acid Tank Area 2203-U2 203 Waste Condenser Tanks and Pump Room 2204-U2 2204 Waste Evaporator Package Room 2205-U2 2205 Passageway to Unit 1 2205-U2 2206 Heat Exchanger Room 2207-U2 2207 Hatch Area 2207-U2 2207 Hatch Area 2207-U2 2207 Hatch Area 2208-U2 2208 Corridor 2208-U2 2208 Corridor 2208-U2 2208 Corridor	2166-U2	2166 Waste Gas Decay Tank Room	
2175-U2 2175 Hallway 2176-U2 2176 Secondary Spent-Resin Storage Tank Room 2177-U2 2177 Pump Room 2178-U2 2178 Filter Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2186 Boric Acid Area 2181-U2 2187 Hydro Test Pump Room 2188-U2 2188 Boric Acid Tank Area 203-U2 2203 Waste Condenser Tanks and Pump Room 2203-U2 2204 Waste Evaporator Package Room 2204-U2 2205 Passageway to Unit 1 2206-U2 2206 Heat Exchanger Room 2207-U2 2207 Hatch Area 2207-U2 2207 Hatch Area 2208-U2 2208 Corridor 2208-U2 2208 Corridor 2208-U2 2209 Hallway	2168-U2	2168 Chemical Drain Tank Room	
2176-U2 2176 Secondary Spent-Resin Storage Tank Room 2177-U2 2177 Pump Room 2178-U2 2178 Filter Room 2180-U2 2180 Recycle Evaporator Steam Generator Room 2180-U2 2186 Boric Acid Area 2181-U2 2186 Boric Acid Area 2182-U2 2187 Hydro Test Pump Room 2184-U2 2188 Boric Acid Tank Area 203-U2 2203 Waste Condenser Tanks and Pump Room 2204-U2 2204 Waste Evaporator Package Room 2204-U2 2204 Waste Evaporator Package Room 2205-U2 2205 Passageway to Unit 1 2206-U2 2207 Hatch Area 2207-U2 2207 Hatch Area 2208-U2 2208 Corridor 2208-U2 2208 Hat Exchanger Room 2208-U2 2208 Corridor 2208-U2 2208 Hat Marea 2208-U2 2208 Corridor 2208-U2 2208 Hat Warea 2209-U2 2209 Hallway	2170-U2	2170 Letdown Heat Exchanger Room	
2177-U22177 Pump Room2178-U22178 Filter Room2180-U22180 Recycle Evaporator Steam Generator Room2180-U22186 Boric Acid Area2186-U22186 Boric Acid Area2187-U22187 Hydro Test Pump Room2188-U22188 Boric Acid Tank Area2203-U22203 Waste Condenser Tanks and Pump Room2204-U22204 Waste Evaporator Package Room2205-U22205 Passageway to Unit 12206-U22206 Heat Exchanger Room2207-U22207 Hatch Area2208-U22208 Corridor2208-U22208 Corridor2209-U22209 Hallway	2175-U2	2175 Hallway	
2178-U22178 Filter Room2180-U22180 Recycle Evaporator Steam Generator Room2186-U22186 Boric Acid Area2187-U22187 Hydro Test Pump Room2188-U22188 Boric Acid Tank Area203-U2203 Waste Condenser Tanks and Pump Room204-U2204 Waste Evaporator Package Room205-U2205 Passageway to Unit 1206-U2206 Heat Exchanger Room207-U2207 Hatch Area208-U2208 Corridor208-U2209 Hallway	2176-U2	2176 Secondary Spent-Resin Storage Tank Room	
2180-U22180 Recycle Evaporator Steam Generator Room2186-U22186 Boric Acid Area2187-U22187 Hydro Test Pump Room2188-U22188 Boric Acid Tank Area203-U22203 Waste Condenser Tanks and Pump Room2204-U22204 Waste Evaporator Package Room2205-U22205 Passageway to Unit 12206-U22206 Heat Exchanger Room2207-U22207 Hatch Area2208-U22207 Hatch Area2208-U22208 Corridor2208-U22208 Corridor2209-U22209 Hallway	2177-U2	2177 Pump Room	
2186-U22186 Boric Acid Area2187-U22187 Hydro Test Pump Room2188-U22188 Boric Acid Tank Area2203-U22203 Waste Condenser Tanks and Pump Room2204-U22204 Waste Evaporator Package Room2205-U22205 Passageway to Unit 12206-U22206 Heat Exchanger Room2207-U22207 Hatch Area2208-U22207 Hatch Area2208-U22208 Corridor2208-U22209 Hallway	2178-U2	2178 Filter Room	
2187-U22187 Hydro Test Pump Room2188-U22188 Boric Acid Tank Area2203-U22203 Waste Condenser Tanks and Pump Room2204-U22204 Waste Evaporator Package Room2205-U22205 Passageway to Unit 12206-U22206 Heat Exchanger Room2207-U22207 Hatch Area2208-U22207 Hatch Area2208-U22208 Corridor2209-U22209 Hallway	2180-U2	2180 Recycle Evaporator Steam Generator Room	
2188-U22188 Boric Acid Tank Area2203-U22203 Waste Condenser Tanks and Pump Room2204-U22204 Waste Evaporator Package Room2205-U22205 Passageway to Unit 12206-U22206 Heat Exchanger Room2207-U22207 Hatch Area2208-U22207 Corridor2208-U22208 Corridor2209-U22209 Hallway	2186-U2	2186 Boric Acid Area	
2203-U22203 Waste Condenser Tanks and Pump Room2204-U22204 Waste Evaporator Package Room2205-U22205 Passageway to Unit 12206-U22206 Heat Exchanger Room2207-U22207 Hatch Area2208-U22207 Hatch Area2209-U22209 Hallway	2187-U2	2187 Hydro Test Pump Room	
2204-U22204 Waste Evaporator Package Room2205-U22205 Passageway to Unit 12206-U22206 Heat Exchanger Room2207-U22207 Hatch Area2208-U22208 Corridor2209-U22209 Hallway	2188-U2	2188 Boric Acid Tank Area	
2205-U22205 Passageway to Unit 12206-U22206 Heat Exchanger Room2207-U22207 Hatch Area2208-U22208 Corridor2209-U22209 Hallway	2203-U2	2203 Waste Condenser Tanks and Pump Room	
2206-U22206 Heat Exchanger Room2207-U22207 Hatch Area2208-U22208 Corridor2209-U22209 Hallway	2204-U2	2204 Waste Evaporator Package Room	
2207-U2 2207 Hatch Area 2208-U2 2208 Corridor 2209-U2 2209 Hallway	2205-U2	2205 Passageway to Unit 1	
2208-U2 2208 Corridor 2209-U2 2209 Hallway	2206-U2	2206 Heat Exchanger Room	
2209-U2 2209 Hallway	2207-U2	2207 Hatch Area	
	2208-U2	2208 Corridor	
	2209-U2	2209 Hallway	
	2215-U2	2215 Duct and Pipe Chase	

Run: 08/18/2012 22:09 Page: 1379 of 2430





Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
2216-U2	2216 Valve Compartments Area	
2217-U2	2217 Volume Control Tank Room	
2218-U2	2218 Chiller Unit Room	
2219-U2	2219 Pipe Chase	
2220-U2	2220 Valve Compartment Room	
2221-U2	2221 Primary Spent-Resin Storage Tank Room	
2222-U2	2222 Corridor	
2230-U2	2230 Recycle Evaporator Package Room	
2231-U2	2231 Sluice Pump Room	
2232-U2	2232 Sluice Filter Room	
2237-U2	2237 Corridor	
2238-U2	2238 Cask Storage Area	
2239-U2	2239 Transfer Canal	
2240-U2	2240 Spent-Fuel Pool Room	
2253-U2	2253 Valve Compartment	
2301-U2	2301 Seal Water Filter Room	
2302-U2	2302 Recycle Evaporator Feed Filter Room	
2303-U2	2303 Reactor Coolant Filter Room	
2304-U2	2304 Waste Monitor	
2305-U2	2305 Seal Injection Filter Room	
2306-U2	2306 Recycle Evaporator Feed Demineralizer Room	
2307-U2	2307 Valve Compartment Room	
2308-U2	2308 Waste Condensate and Monitor Tank Demineralizer Room	
2309-U2	2309 Hatch Area	
2310-U2	2310 Valve Compartment Room	
2311-U2	2311 Recycle Evaporator Concentrates Filter Room	
2312-U2	2312 Corridor	
2313-U2	2313 Floor Drain and Laundry Tank Filter Room	
2314-U2	2314 Waste Evaporator Feed Filter Room	
2315-U2	2315 Recycle Waste Condenser Filter Room	
2316-U2	2316 Passageway to Unit 1	
2321-U2	2321 Sample Panel Room	
2322-U2	2322 Hallway	
2323-U2	2323 Sample Room	
2324-U2	2324 Primary Chemistry Lab	

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
2325-U2	2325 Counting Room/Spectro-photometer Lab	
2326-U2	2326 Clean Storage Room	
2327-U2	2327 Valve Access Area	
2328-U2	2328 BTR Demineralizer Room	
2329-U2	2329 Pipe Tunnel	
2330-U2	2330 Chiller Surge Tanks Pump Room	
2331-U2	2331 Valve Access Area	
2332-U2	2332 MCC 1A/2A Area	
2340-U2	2340 Demineralizer Compartment	
2341-U2	2341 Pipe Chase	
2342-U2	2342 Spent-Fuel Pool Pump Room	
2348-U2	2348 Cask Wash Area	
2351-U2	2351 Chiller Pump and Surge Tank Room	
2402-U2	2402 Passage to Unit 1	
2403-U2	2403 Respirator Issue Room/Combustible Storage Room	
2405-U2	2405 Hatch Room	
2406-U2	2406 Tool Room	
2408-U2	2408 Hallway	
2409-U2	2409 Hallway	
2410A-U2	2410A 600-V Load Center	
2418-U2	2418 Auxiliary Building and Containment Purge Vent Equipment Room	
2419-U2	2419 Demineralizer Hatch Area	
2422-U2	2422 Corridor	
2423-U2	2423 Valve Compartment	
2424-U2	2424 Demineralizer Compartments	
2425-U2	2425 Demineralizer Compartments	
2426-U2	2426 Demineralizer Compartments	
2427-U2	2427 Demineralizer Compartments	
2429-U2	2429 Containment Purge Air Equipment Room	
2431-U2	2431 Duct/Pipe Chase	
2445-U2	2445 Spent-Fuel Pool Heat Exchanger Room	
2446-U2	2446 Hallway	
2448-U2	2448 SFPC Pump Room	
2449-U2	2449 Demineralizer Room	
2450-U2	2450 Valve Compartment	

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
2451-U2	2451 Filter Room	
2467-U2	2467 SFP Heat Exchanger Room	
2478-U2	2478 Motor Control Center Room	
2504-U2	2504 Stair No. 6, Floor El. 184'-0"	
2505-U2	2505 Spent-Fuel Pool Vent Equipment Room	
2604-U2	2604 Passage	
2605-U2	2605 Blowdown Pumps and Surge Tank Room	
2606-U2	2606 Filter Room	
2607-U2	2607 Filter Room	
2608-U2	2608 Blowdown Heat Exchanger Room	
2609-U2	2609 Storage Room	
2610-U2	2610 Valve Compartment Room	

	U2 - Aux Building 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalua	Performance G ation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritic Conditions	Subcritical conditions are maintained by performance-base isolating the VCT to prevent boron dilution and by charging the RWST using Train A charging pump.	
3.1 RCS Inventory Control - RCS Makeu	p RCS inventory is controlled using Train A charging pump al RWST.	igned to the
3.2 RCS Inventory Control - Isolate Leak Paths	age Normal letdown is isolated using performance-based appro isolation, letdown isolation valve or letdown path containing Excess letdown is isolated using one or more excess letdo isolation valves. PZR PORV leakage paths are isolated usin and Train B PORV. The RCS to RHR high/low pressure inte using the Train A/Train B RHR outboard isolation valve.	ent isolation valve. wn or containment ng Train A PORV
3.3 RCS Inventory Control - RCP Seal Ir	tegrity Maintain RCP Seal Integrity - RCP seal integrity is maintain -based approach tripping all RCPs, maintaining normal sea Train A charging pump, and preventing failure of the RCP t RCP seal injection paths are secured by isolating the suppl seal injection lines. CCW to RCP thermal barriers are isolat containment isolation valves.	l injection using hermal barriers. y and discharge
4.1 RCS Pressure Control - Pressure Tra	ansient Undesired depressurization due to inadvertent spray is prev normal and auxiliary spray valves remain closed and the Lo RCPs are performance-based approach shut off. Undesired is prevented by deenergizing all pressurizer heater groups.	pop 1 and Loop 2
4.2 RCS Pressure Control - Positive Pres Control	Positive control of RCS pressure is accomplished with performance approach Train A PORV for pressure reduction and Pressure B for pressure increase.	



	-004-U2 - Aux Building IFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with	simplifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MDA supplying Steam Generator 2B. Main feed is isolated to prevent unco cooldown.		
6 Process Monitoring	 Shutdown Margin - Perfromance-based approach shutdown marg monitored. RCS Pressure - RCS pressure is monitored by PZR n range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide rang pressure for Loop 1/Loop 3. Pressurizer Level - Pressurizer level monitored by PZR level Ch 2. RCS Temperature - RCS Loop 2/L temperature is monitored by loop hot and cold leg RTDs. SG Pre Steam Generator 2A/2B/2C pressure is monitored. SG Level - St Generator 2A/2B/2C level is monitored. 	narrow ge Lis Loop 3 essure -	
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Trai B distribution equipment. 3. 125 VDC power and 120 VAC power is by Train A/Train B equipment.	in A/Train	
7.2 Vital Auxiliaries – Service Wate	r Performance-based approach Train A service water is provided with service water pumps in service recirculating to the pond or Train A se water is provided with one service water pump in service recirculating pond and non-essential turbine building loads isolated.	ervice	
7.3 Vital Auxiliaries – Component C Water	Cooling Train A component cooling water is provided with non-essential load	ls isolated.	
7.4 Vital Auxiliaries – HVAC	Performance-based approach Control Room cooling is provided by T A/Train B HVAC. Room cooling at essential locations is provided with performance-based approach HVAC equipment corresponding to the water train.	h	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	· ,
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, a such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a crated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,	
	 The construction of the boundary and the potential issue with the element in question was described, 	
	• The fire hazards and fire protection features on both sides of the barrier were described,	
	 Elements with construction features equal to 3-hr boundaries were credited as such, 	
	• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for t	he hazard.

	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Basec	Approach - Fire Risk E	Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions
Required FP System(s)/Feature(s) Description	Required By	Comments
Detection	2A-101	Risk Criteria	Required to meet risk criteria.
Detection	2A-101	DID Criteria	Required to meet DID criteria.
Detection	2A-101 [2159, 2178, 2180, 2187]	Risk Criteria	Required to meet risk criteria.
Detection	2A-101 [2170,2177]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-101 [2170,2177]	Risk Criteria	Required to meet risk criteria.
Detection	2A-102 [2151, 2152, 2153, 2154, 2165, 2166]	Risk Criteria	Required to meet risk criteria.
Detection	2A-103 [2188,2216,2217,2218,2220,2230,22 31,2232,2237]	Risk Criteria	Required to meet risk criteria.
Detection	2A-104 [2156, 2157, 2158,2203,2204,2206,2253]	Risk Criteria	Required to meet risk criteria.
Detection	2A-105 [2604]	EEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-105 [2604]	Risk Criteria	Required to meet risk criteria.
Detection	2A-105 [All except 2604]	Risk Criteria	Required to meet risk criteria.
Detection	2A-107	Risk Criteria	Required to meet risk criteria.
Detection	2A-107 [2422]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-107 [2422]	Risk Criteria	Required to meet risk criteria.
Detection	2A-108	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-108	Risk Criteria	Required to meet risk criteria.
Detection	2A-109 [2504,2505]	Risk Criteria	Required to meet risk criteria.
Detection	2A-112 [Zone 2403]	Risk Criteria	Required to meet risk criteria.
Detection	2A-118	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-118	Risk Criteria	Required to meet risk criteria.
Detection	2A-25 [2154A, 2164, 2168]	Risk Criteria	Required to meet risk criteria.
Detection	2A-25 [2155]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-25 [2160, 2161]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-25 [2160, 2161]	Risk Criteria	Required to meet risk criteria.
Detection	2A-25 [2162,2163]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-25 [2162,2163]	Risk Criteria	Required to meet risk criteria.
Detection	2A-25 [2162,2163]	DID Criteria	Required to meet defense in depth criteria.
Detection	2A-35 [2205]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-35 [2207,2209,]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-35 [2207,2209,]	Risk Criteria	Required to meet risk criteria.
Detection	2A-35 [2208]	Risk Criteria	Required to meet risk criteria.
Detection	2A-35 [2222]	Risk Criteria	Required to meet risk criteria.

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1386 of 2430

	004-U2 - Aux Building FPA 805, Section 4.2.4.2 Performance-Based	Approach - Fire Risk E	Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions
Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-35 [2222]	DID Criteria	Required to meet risk criteria.
Detection	2A-48 [2309,2312,2316,2322]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-48 [2309,2312,2316,2322]	Risk Criteria	Required to meet risk criteria.
Detection	2A-48 [2330,2331,2342]	Risk Criteria	Required to meet risk criteria.
Detection	2A-48 [2332]	Risk Criteria	Required to meet risk criteria.
Detection	2A-48 [2332]	DID Criteria	Required to meet DID criteria.
Detection	2A-49 [2321,2323,2324,2325,2326]	Risk Criteria	Required to meet risk criteria.
Detection	2A-57	Risk Criteria	Required to meet risk criteria.
Detection	2A-57 [2408]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-57 [2408]	Risk Criteria	Required to meet risk criteria.
Detection	2A-75	Risk Criteria	Required to meet risk criteria.
Detection	2A-75	DID Criteria	Required to meet DID criteria.
Detection	2A-75 [2405,2406]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-75 [2405,2406]	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	2A-50 [Zone 2410A]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-112 [2403]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-118 [2175]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-118 [2175]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-25 [2155]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-25 [2160,2161]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-25 [2160,2161]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-25 [2162, 2163]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-25 [2162, 2163]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-25 [2162, 2163]	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-35 [2207,2209,]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-35 [2207,2209,]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-35 [2208]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-35 [2222]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-35 [2222]	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-48 [2312]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-48 [2316,2322]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-48 [2316,2322]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-57 [2402]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-75 [2405,2406]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-75 [2405,2406]	Risk Criteria	Required to meet risk criteria.



	04-U2 - Aux Building PA 805, Section 4.2.4.2 Performance-Ba	sed Approach - Fire Risk E	Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions
Required FP System(s)/Feature(s)	Description	Required By	Comments
Water Suppression	2A-75 [2419]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-75 [2419]	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	DID Criteria	Required to meet DID Criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Passive	Restricted transient controls	DID Criteria	Required to meet DID Criteria.
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to me risk criteria.
Modifications		Risk Criteria	Modification to seal MCCs 2C (N2R17B003) and 2DD (Q2R17B0099) and replace trip device in panel Q2R42B0001A, breakers LA08, LA13, LA20; Q2R42B0001B, breakers LB07, LB14.

,

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-004-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions, modification(s), enhanced transient restrictions and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, enhanced transient restrictions and the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Safety Analysis Data Manager (4.1)









Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-004-HVAC-001
VFDR	Q2R42B0001A:ENERGIZED:ENERGIZED-BC2A, 125V DC BUS 2A - This component, 125V DC Bus 2A (Train A Battery Charger Room Cooler), requires HVAC support to remain functional. A loss of supporting HVAC to this electrical component will pose a challenge to various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.
VFDR ID	U2-2-004-HVAC-002
VFDR	Q2R42B0001B:ENERGIZED:ENERGIZED-BC2B, 125V DC BUS 2B - This component, 125V DC Bus 2B (Train B Battery Charger Room Cooler), requires HVAC support to remain functional. A loss of supporting HVAC to this electrical component will pose a challenge to various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.
VFDR ID	U2-2-004-HVAC-003
VFDR	Q2N23P0001A:OFF:ON/OFF, 2A MDAFW PUMP - This component, MDAFW Pump 2A, requires HVAC support to remain functional. The motor driven feed water pumps are required to operate in order to supply high pressure feed water to the credited steam generator in order to remove decay heat. Failure to ensure availability of the MDAFW Pump 2A challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-004-HVAC-004

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDR
VFDR	Q2R15A0006:ENERGIZED:ENERGIZED-SUT2A, 4160V SWITCHGEAR BUS 2F - This component, Switchgear 2F (600V Load Center E Room Cooler), requires HVAC support to remain functional. A loss of supporting HVAC to this electrical component will pose a challenge to various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-004-HVAC-005	.
VFDR	Q2R15A0007:ENERGIZED:ENERGIZED-EDG2B, 4160V SWITCHGEAR BUS 2G - This component, Switchgear 2G (600V Load Center E Room Cooler), requires HVAC support to remain functional. A loss of supporting HVAC to this electrical component will pose a challenge to various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-004-HVAC-006	
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - This component, Charging Pump 2A (Cooler 2A), requires HVAC support to remain functional. Chargin via the CVCS system is required to maintain RCS Inventory. Charging via Pump 2A is sought after in this fire area. A loss of HVAC due to the Charging Pump Cooler Failure could render the charging pump 2A unavailable. Failure to establish charging challenges the RCS Inventory Control Nuclear Safety Performan Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	np
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-004-HVAC-007	

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2R42E0002A:AVAILABLE:AVAILABLE, 125V BATTERY 2A - This component, Battery 2A (Train A Battery Room Cooler), requires HVAC support to remain functional. A loss of supporting HVAC to this electrical component will pose a challenge to various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-004-HVAC-008
VFDR	Q2R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 2B - This component, Battery 2B (Train B Battery Room Cooler), requires HVAC support to remain functional. A loss of supporting HVAC to this electrical component will pose a challenge to various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-004-IA-001
VFDR	Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. The Pressurizer Power Relief Valve is required to cycle in order to de-pressurize the RCS System. A loss of instrument air will result in the valve failing in the closed position. An inability to cycle the Pressurizer Power Relief Valve of Pressurizer Power Relief Valve challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-004-IA-002

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs		
VFDR Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 per flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS induced circuit failure could result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 or Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	, that		
VFDR ID	U2-2-004-IA-003			
VFDR	Q2N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. I is assumed to be unavailable in this fire area because air loss paths have not been identified. Atmospheric relief on the secondary side is necessar achieve a controlled cool down rate. Failure to modulate the SG 2B ARV due to a loss of instrument air would cause the valve to fail closed, thereby the secondary side. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance fro deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approa 805, Section 4.2.4.	vailable in this fire area because air loss paths have not been identified. Atmospheric relief on the secondary side is necessary in order to ool down rate. Failure to modulate the SG 2B ARV due to a loss of instrument air would cause the valve to fail closed, thereby isolating nis failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	that		
VFDR ID	U2-2-004-IA-004			
VFDR	Q2N23HV3228A: OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2A - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Feed water Flow via SG 2A needs to be isolated in this fire area, since it is not credited. This valve fails open on a loss of instrument air. Decay Heat Removal via SG 2B is desired in this area. An inability to isolate AFW flow to SG 2A will pose a challenge to the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	that		
VFDR ID	U2-2-004-IA-005			
Fire Safety Analysis Data I	a Manager (4.1) Farley Run: 08/18/2012 22:09 Page	e: 1393 of 2430		

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	DR Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2C - This component requires instrument air to perform its confunction. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Feed water Flow via SG 2C isolated in this fire area, since it is not credited. A loss of instrument air would result in this valve failing open. Decay Heat Removal via SG 2B is carea. An inability to isolate AFW flow to SG 2C will pose a challenge to the Decay Heat Removal Nuclear Safety Performance Criterion. This concernence of a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance usin performance-based approach of NFPA 805, Section 4.2.4.?			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-004-SEP-001			
VFDR	N2B31L0001C:ON:OFF, PRESSURIZER HEATER GROUP 2C DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater 2C, or prevent remote tripping of the load. Failure to secure the Pressurizer Heater 2C could challenge the RCS Pressure for Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-004-SEP-002			
VFDR	N2B31L0001D:ON:OFF, PRESSURIZER HEATER GROUP 2D DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater 2D, or prevent remote tripping of the load. Failure to secure the Pressurizer Heater 2D could challenge the RCS Pressu Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
	U2-2-004-SEP-003			

.

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	N2B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater 2E, or prevent remote tripping of the load. Failure to secure the Pressurizer Heater 2E could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-004-SEP-004
VFDR	Q2B41P0001A:ON:OFF, RCP 2A - In order to support a natural circulation cool down, the Reactor Coolant Pumps must be tripped. Fire induced circuit damage could spuriously start the Reactor Coolant Pump 2A. Failure to ensure the Reactor Coolant Pumps are tripped challenges the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-004-SEP-005
VFDR	Q2B41P0001B:ON:OFF, RCP 2B - In order to support a natural circulation cool down, the Reactor Coolant Pumps must be tripped. Fire induced circuit damage could spuriously start the Reactor Coolant Pump 2B. Failure to ensure the Reactor Coolant Pumps are tripped challenges the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-004-SEP-006

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2B41P0001C:ON:OFF, RCP 2C - In order to support a natural circulation cool down, the Reactor Coolant Pumps must be tripped. Fire induced circuit damage could spuriously start the Reactor Coolant Pump 2C. Failure to ensure the Reactor Coolant Pumps are tripped challenges the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluatio applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-004-SEP-007		
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Charging pump 2B (aligned to Train A) suffers a loss of control power that would prevent remote tripping of the pump and/or potential spurious start of the pump due to fire induced circuit failure. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	his condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that pplicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-004-SEP-008		
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Charging pump 2B (aligned to Train B) suffers a loss of control power that would prevent remote tripping of the pump and/or potential spurious start of the pump due to fire induced circuit failure. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion .This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition .	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-004-SEP-009		

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deter	WF winistic assumptions	
VFDR	Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - The Volume Control Tank Outlet Isolation valves must initially remain open to establish a ch lineup before suction is re-aligned to the RWST. Fire induced circuit failure to the outlet valves (V376A and V376B) could result in the valves spuriously and isolating the VCT before swap over can be established. Both valves must remain open. This failure challenges the RCS Inventory Control Nuclear Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issu Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Se applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	ection 4.2.4. A fire risk evaluation determined that	
VFDR ID	U2-2-004-SEP-010		
VFDR	Q2E21V0376B:OPEN:CLOSED, VCT OUTLET ISOLATION - The Volume Control Tank Outlet Isolati the RWST. Fire induced circuit failure to valve Q2E21V0376B could result in the valve failing to closed VCT would impact the credited charging lineup. This failure challenges the RCS Inventory Control Nurrepresents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Septerformance-based approach of NFPA 805, Section 4.2.4.	I (it is directly in the fire area too). Failure to isolate the clear Safety Performance Criterion. This condition	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Se applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	ection 4.2.4. A fire risk evaluation determined that	
VFDR ID	U2-2-004-SEP-011		
VFDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - The Volume Control Tank Outlet Isolation valves must initially remain open to establish a charging lineup before suction is re-aligned to the RWST. Fire induced circuit failure to the outlet valves (V376A and V376B) could result in the valves spuriously closing and isolating the VCT before swap over can be established. Both valves must remain open. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Se applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	ection 4.2.4. A fire risk evaluation determined that	
VFDR ID	U2-2-004-SEP-012		
Fire Safety Analysis Data Manag	ger (4.1) Farley	Run: 08/18/2012 22:09 Page: 1397 of 24	



•

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2P16V0558:OPEN:OPEN, SW DILUTION BYPASS TRAIN A - The Service Water Dilution Bypass Line is required to maintain appropriate pressure conditions in order to permit an adequate service water flow to the various Plant buildings. Spurious closure of the Service Water Dilution Line Bypass MOV (Q2P16V0558) due to fire induced circuit failure could result in a change in line backpressure conditions, thereby resulting in an undesirable flow diversion condition. This failure poses a challenge to the Establishment of Service Water Train A, and all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-004-SEP-013		
VFDR	Q2E21LT0112:AVAILABLE:AVAILABLE, VCT LEVEL TRANSMITTER - The Volume Control Tank Outlet Isolation valves must initially remain open to establis a charging lineup before suction is re-aligned to the RWST. Fire induced circuit failure to VCT Level Instruments LT0112 and LT115 could result in a spurious VCT Low Level Signal. This would isolate the VCT Supply by closing the associated valves. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-004-SEP-014		
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - Control power is required to trip a non-credited charging pump. Failure to trip a non-credit pum could result in an overcharging condition. Fire induced circuit failure to Panel 2F could result in a loss of control power to Charging pumps 2B and 2C. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements or Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-004-SEP-015		

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Flow control Valve V0347 permits normal charging flow to the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A loss of ins result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nucles Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separa Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-004-SEP-016		
VFDR	Q2E21V0367:OPEN:OPEN/CLOSED, LETDOWN LINE ISOLATION - Letdown isolation is necessary in order to maintain adequate pressurizer level and thus an adequate amount of RCS Inventory. Letdown isolation can be achieved by closing the letdown line isolation valves LCV0460 or LCV0459, or by closing all 3 Letdown Orifice Isolation Valves (8149A, B, C). Fire induced control circuit damage to the Letdown Orifice Isolation Valves (all 3) could result in the valves spuriously operating. A spurious letdown path could result in an inadequate amount of RCS Inventory. This failure challenges the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-004-SEP-017		
VFDR	N2C55NI0031A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31A - Source Range Instrumentation is required to monitor Reactivity Conditions. A loss of channel 1 and channel 2 Source Range Detectors could occur, due to fire induced circuit failures. Failure to monitor subcritical conditions challenges the Reactivity Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U2-2-004-SEP-018		





Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Atmospheric relief on the secondary side is necessary in order to achieve a controlled cool down rate. Failure to modulate the SG 2B ARV due to fire induced circuit failure or a loss of power to DC Panel 2C would cause the valve to fail closed, thereby isolating the secondary side. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-004-SEP-019			
VFDR	Q2N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1A - Feed water Flow via SG 2A needs to be isolated in this fire area, since it is not credited. Fire induced control circuit damage could result in valve HV3228A spuriously opening, thereby admitting feed water to SG2A via the TDAFW Pump. A loss of power at the TDAFW Pump UPS might also result in spurious opening of the valve. Furthermore, the TDAFW Pump could spuriously start due to its steam admission valves spuriously opening. Decay Heat Removal via SG 2B is desired in this area. An inability to isolate AFW flow to SG 2A will pose a challenge to the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-004-SEP-020			
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2C - Feed water Flow via SG 2C needs to be isolated in this fire area, since it is not credited. Fire induced control circuit damage could result in valve HV3228C spuriously opening, thereby admitting feed water to SG1C via the TDAFW Pump. The valve could also fail due to a loss of power at the TDAFW Pump UPS. Furthermore, the TDAFW Pump could spuriously start due to its steam admission valves spuriously opening. Decay Heat Removal via SG 2B is desired in this area. An inability to isolate AFW flow to SG 2C will pose a challenge to the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
	U2-2-004-SEP-021			

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2P11LI4132A:AVAILABLE:AVAILABLE, CONDENSATE STORAGE TANK LEVEL INDICATOR LI-4132A - The condensate storage tank is the credited source of suction for auxiliary feed water. CST level indication is therefore required to monitor CST Inventory levels at the control room, and permit operators to determine if adequate levels are available. Fire induced control circuit damage to the CST Level Indicators 4132A or 4132B could prevent this indication from being available. A loss of CST Level indication challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-004-SEP-022			
VFDR	Q2P15SV3333:CLOSED:OPEN/CLOSED, RX LOOPS 2 AND 3 SAMPLE ISOLATION SOLENOID - The Sampling System must remain isolated at all times in order to ensure that RCS Inventory losses do not inadvertently occur. Spurious opening of the RCS Sample Isolation Valves SV3333 or SV3765 due to fire induced circuit failure could result in an inadvertent diversion flow path for RCS Inventory. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			
VFDR ID	U2-2-004-SEP-023			
VFDR	Q2P15SV3104:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM SAMPLE ISOLATION - The Sampling System must remain isolated at all times in order to ensure that RCS Inventory losses do not inadvertently occur. Spurious opening of the Pressurizer Sample Gas Isolation Valves SV3104 or SV3331 due to fire induced circuit failure could result in an inadvertent diversion flow path for RCS Inventory. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			
VFDR ID	U2-2-004-SEP-024			

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1401 of 2430



Fire Area ID: Compliance Basis:	2-004-U2 - Aux Building NFPA 805, Section 4.2.4.2 Performance-Bas	ed Approach - Fire Risk Evaluation with simplifying	g deterministic assumptions
VFDR	ensure that RCS Inventory losses do not inac induced circuit failure could result in an inadv Performance Criterion. This condition represe	N/CLOSED, PRESSURIZER LIQUID SAMPLE ISOLATION - The Sampling System must remain isolated at all times in order to see do not inadvertently occur. Spurious opening of the Pressurizer Sample Liquid Isolation Valves SV3103 or SV3332 due to fire sult in an inadvertent diversion flow path for RCS Inventory. This failure challenges the RCS Inventory Control Nuclear Safety indition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance applicable risk, defense-in-depth, and safety	using the performance-based approach of NFPA 8 margin criteria were satisfied without further action	805, Section 4.2.4. A fire risk evaluation determined that I (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-004-SEP-028		· · · · · · · · · · · · · · · · · · ·
VFDR	water inventory. Fire induced circuit failure to loss of power from MCC 2CC, would prevent Performance Criteria. This condition represe	PEN, SW RECIRC TO POND TRAIN A - Service water recirculation to the pond is required in order to maintain adequate service ed circuit failure to valve Q2P16V0539 could result in spurious closure of the valve thereby isolating the makeup path. Additionally, a CC, would prevent opening of the valve remotely. These failures challenge the establishment of Service Water, and all Nuclear Safety condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. sing the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition		using the performance-based approach of NFPA 8 margin criteria were satisfied without further action	305, Section 4.2.4. A fire risk evaluation determined that n.
VFDR ID	U2-2-004-SEP-029		
VFDR	isolated. Valves Q2P16V0546 and Q2P16V0 spurious opening of valve V546, or failure to establishment of Train A Service Water, and	EN/CLOSED, TRAIN A SW DISCHARGE TO RIVER - Service water discharge to the river is not credit in the analysis, hence it must be 0546 and Q2P16V0549 must be closed in order to prevent service water discharge to the river. Fire induced circuit failure may result in v546, or failure to close once recirculation to the pond is established. Failure to establish recirculation to the pond challenges the Service Water, and poses a challenge to all Nuclear Safety Performance Criterion. This condition represents a variance from the so of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA	
Disposition		using the performance-based approach of NFPA & margin criteria were satisfied without further action	305, Section 4.2.4. A fire risk evaluation determined that n.
VFDR ID	U2-2-004-SEP-030		
Fire Safety Analysis Data	Manager (4.1)	Farley	Run: 08/18/2012 22:09 Page: 1402 of 243

•

Fire Area ID:2-004-U2 - Aux BuildingCompliance Basis:NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	QSV49K0002A:STANDBY:ON, CONTROL ROOM A/C CONDENSING UNIT 2A - Control Room HVAC is required to provide habitable conditions for operations to perform the necessary actions to achieve hot standby/hot shutdown from the control room. A loss of power from MCC 1F (cable feed) prevents the A/C Condensing unit 2A from being available. This failure challenges a critical vital auxiliary Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-004-SEP-031	
VFDR	QSV49K0001A:STANDBY:ON, CONTROL ROOM PACKAGE A/C BLOWER UNIT A - Control Room HVAC is required to provide habitable conditions for operations to perform the necessary actions to achieve hot standby/hot shutdown from the control room. A loss of power from MCC 1F (cable feed) prevents the A/C Blower unit from being available. This failure challenges a critical vital auxiliary Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	

,

.



Fire Area ID: Compliance Basis:	2-005 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
2171	2171 Storage Room	
2172	2172 Hallway	
2173	2173 Charging/Safety Injection Pump Room	
2174	2174 Charging/Safety Injection Pump Room	
2181	2181 Charging/Safety Injection Pump Room	

2182 2182 Contaminated Storage Area

Compliance Basis: Un	005 - Aux Building it 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire it 1: NFPA 805, Section 4.2.3 Deterministic Approach	Risk Evaluation with simplifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	· · ·
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Sub Conditions	 Unit 2: Subcritical conditions are maintained by performation approach isolating the VCT to prevent boron dilution borated water from the RWST using performance-bacharging pump, Train B charging pump or swing charging how charging power. 	and by charging sed appraoch Train A	
	 Unit 1: Subcritical conditions are maintained by isolat boron dilution and by charging borated water from the charging pump, Train B charging pump or swing char A/Train B power. 	e RWST using Train A	
3.1 RCS Inventory Control - RCS Ma	keup RCS inventory is controlled using Train A charging pun pump or swing charging pump via Train A/Train B pow		
3.2 RCS Inventory Control - Isolate L Paths	 • Unit 2: Normal letdown is isolated using orifice isolation isolation valve or letdown path containment isolation is isolated using one or more excess letdown or containvalves. PZR PORV leakage paths are isolated using Train B PORV. The RCS to RHR high/low pressure in using the Train A/Train B RHR inboard isolation valves 	valve. Excess letdown ainment isolation Train A PORV and hterface is isolated	
·	 Unit 1: Normal letdown is isolated using orifice isolatio isolation valve, or a letdown path containment isolatio letdown is isolated using one or more excess letdown isolation valves. PZR PORV leakage paths are isolatio and Train B PORV. The RCS to RHR high/low pressousing the Train A/Train B RHR inboard isolation valve RHR outboard isolation valve. 	on valve. Excess n or containment ed using Train A PORV ure interface is isolated	
3.3 RCS Inventory Control - RCP Se	al Integrity Maintain RCP Seal Integrity - RCP seal integrity is main- based approach tripping all RCPs, maintaining normal performance-based approach Train A charging pump, or swing charging pump, and preventing failure of the F RCP seal injection paths are secured by isolating the s seal injection lines. CCW to RCP thermal barriers are in containment isolation valves or the CCW to RCP therm valve.	I seal injection using Train B charging pump, RCP thermal barriers. supply and discharge solated using	

^

Compliance Basis: U		tion 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation v tion 4.2.3 Deterministic Approach	with simplifying deterministic assumptions	Performance Goals
Performance Goal	Metho	d of Accomplishment	Comments	
4.1 RCS Pressure Control - Pressu	ensurir RCPs	ired depressurization due to inadvertent spray is prevented by ngauxiliary spray valve remains closed and the Loop 1 and Loop 2 are shut off.Undesired pressure increase is prevented by deenerg ssurizer heater groups.		
4.2 RCS Pressure Control - Positive Control	• Unit . base	2: Positive control of RCS pressure is accomplished with performa d approach performance-based approach Train A/Train B PORV sure reduction and Pressurizer Heater Group B for pressure incre	for	
	Train	1: Positive control of RCS pressure is accomplished with Train A B PORV or aux spray for pressure reduction and Pressurizer He p A/B for pressure increase.		
5 Decay Heat Removal	MDA	2: Decay heat removal during HSD is accomplished using Train B FW pump supplying Steam Generator 2A/2C. Main feed is isolate ent uncontrolled cooldown.		
	MDA	1: Decay heat removal during HSD is accomplished using Train A FW pump, Train B MDAFW pump and TDAFW pump supplying S erator 1A/1B/1C. Main feed is isolated to prevent uncontrolled coc	Steam	
6 Process Monitoring	rang PZR rang moni 1/Lo RTD	2: 1. Shutdown Margin - Shutdown margin is monitored by source e detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitor narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide e pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer itored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS op 2/Loop 3 temperature is monitored by loop hot and cold leg s. 5. SG Pressure - Steam Generator 2A/2B/2C level is monitor	ored by de level is 8 Loop	
	rang PZR rang mon 1/Lo RTD	1: 1. Shutdown Margin - Shutdown margin is monitored by source e detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monit narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RC3 e pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer itored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS op 2/Loop 3 temperature is monitored by loop hot and cold leg s. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is itored. 6. SG Level - Steam Generator 1A/1B/1C level is monitor	ored by S wide I level is S Loop	

.

Fire Area ID: Compliance Basis:	2-005 - Aux Building Hasis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals	
Performance Goal		Method of Accomplishment	Comments	
7.1 Vital Auxiliaries Electrical		• Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
		• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries Service Water		Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non- essential turbine building loads isolated.		
7.3 Vital Auxiliaries Component	ent Cooling Water	Train A/Train B component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries HVAC		 Unit 2: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with performance-based approach HVAC equipment corresponding to the service water train. 		
		 Unit 1: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train. 		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.



Fire Area ID: Compliance Basis:	2-005 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	The fire areas, fire zones and rooms on both sides of the barrier were identified,
	• The construction of the boundary and the potential issue with the element in question was described,
	• The fire hazards and fire protection features on both sides of the barrier were described,
· · ·	 Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

.

.

Compliance Basis: Unit	2-005 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		
Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-101	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-101	Risk Criteria	Required to meet risk criteria.
Detection	2A-101 [2172, 2181]	EEEE/LA ·	Required to support a fire area boundary evaluation.
Detection	2A-101 [2172, 2181]	Risk Criteria	Required to meet risk criteria.
Detection	2A-101 [2172, 2181]	DID Criteria	Required to meet DID criteria.
Detection	2A-101 [2182]	Risk Criteria	Required to meet risk criteria.
Detection	2A-101 [2182]	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-101	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-101	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to m risk criteria.
Modifications		Risk Criteria	Modification to replace trip device in panel Q2R42B0001A, breaker LA20.



Fire Area ID: Compliance Basis:	2-005 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 2-005
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the implementation of specified recovery actions, modification(s), and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied
ΔCDF	
ΔLERF	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	
	·
	· ·

•

Fire Area ID: Compliance Basis:	2-005 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-005-HVAC-001
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - This component, Charging Pump 2A, requires HVAC support to remain functional. Charging is required to support RCS Inventory Makeup. A loss of HVAC could potentially render the charging pump 2A unavailable for use. The associated 2A room cooler suffers fire induced circuit failure in this area, and cannot be relied upon to be available. Failure to establish charging challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-005-IA-001
VFDR	Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. The Pressurizer Power Relief Valve is required to cycle in order to de-pressurize the RCS System. A loss of instrument air will result in the valve failing in the closed position. An inability to cycle the Pressurizer Power Relief Valve challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-005-IA-002
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A loss of instrument air will result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.







Fire Area ID: Compliance Basis:	2-005 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-005-SEP-001
VFDR	Q2B41P0001C:ON:OFF, RCP 2C - In order to support a natural circulation cool down, the Reactor Coolant Pumps must be tripped. Fire induced circuit damage could spuriously start the Reactor Coolant Pump 2C. Failure to ensure the Reactor Coolant Pumps are tripped challenges the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-005-SEP-002
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - Charging via the CVCS system is required to maintain RCS Inventory. The charging pumps are physically located in this area, hence one pump must remain available for use. Charging via Pump 2A is sought after in this fire area. Fire induced circuit failure could also prevent operation of the pump remotely. Failure to establish charging challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-005-SEP-004
VFDR	Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - The Volume Control Tank Outlet Isolation valves must initially remain open to establish a charging lineup before suction is re-aligned to the RWST. Fire induced circuit failure to the outlet valves (V376A and V376B) could result in the valves spuriously closing and isolating the VCT before swap over can be established. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-005-SEP-005

.

Fire Area ID: Compliance Basis:	2-005 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - The Volume Control Tank Outlet Isolation valves must initially remain open to establish a charging lineup before suction is re-aligned to the RWST. Fire induced circuit failure to the outlet valves (V376A and V376B) could result in the valves spuriously closing and isolating the VCT before swap over can be established. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-005-SEP-006
VFDR	Q2E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - The CVCS system is required to inject water into the Reactor Vessel upon a LOCA or SI signal. This path is not credited for normal charging, and therefore must be isolated. Fire induced circuit failure to valve 8803A resulting in the MOV spuriously opening could introduce a possible diversion path for charging. Failure to ensure this path remains isolated challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-005-SEP-007
VFDR	Q2E21V0016B:CLOSED:CLOSED-TRAIN B, HHSI TO RCS COLD LEG ISOLATION - The CVCS system is required to inject water into the Reactor Vessel upon a LOCA or SI signal. This path is not credited for normal charging, and therefore must be isolated. Fire induced circuit failure to valve 8803B resulting in the MOV spuriously opening could introduce a possible diversion path for charging. Failure to ensure this path remains isolated challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-005-SEP-008

Fire Safety Analysis Data Manager (4.1)

,



Fire Area ID: Compliance Basis:	2-005 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. Throttling capability of this valve is necessary to control RCS Makeup Inventory from the CVCS System. Fire induced circuit failure could result in the valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-005-SEP-009
VFDR	Q2E21V0376A:OPEN:CLOSED, VCT OUTLET ISOLATION - The Volume Control Tank Outlet Isolation valves must close in order to align charging suction to the RWST. Fire induced circuit failure to both valves Q2E21V0376B or Q2E21V0376A could result in the valves failing to close, and since they are in series, prevent VCT isolation. Failure to isolate the VCT would impact the credited charging lineup. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-005-SEP-010
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Atmospheric relief on the secondary side is necessary in order to achieve a controlled cool down rate. Failure to modulate the SG 2A ARV due to a loss of instrument air would cause the valve to fail closed, thereby isolating the secondary side. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
2185	2185 Component Cooling Water Heat Exchanger Room	
2189	2189 Plant Heating Equipment Room	
2190	2190 Motor Control Center 2E Room	,
2191	2191 Auxiliary Feedwater Pump Room	
2192	2192 Auxiliary Feedwater Pump Room	
2193	2193 Auxiliary Feedwater Pump Room	
2194	2194 Equipment Room	
2195	2195 Access Hatch Room	
2199	2199 Phosphate Tank and Pump Area	
2236	2236 Duct Chase	
2241	2241 Main Steam and Feed-water Valve Room	
. 2242	2242 Pipe Chase	
2243	2243 Pipe Chase	









t,

Compliance Basis: Ur	006 - Aux Building it 2: NFPA 805, Section 4.2.4.2 Performance-Based Appro it 1: NFPA 805, Section 4.2.3 Deterministic Approach	ach - Fire Risk Evaluation with sin	nplifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment		Comments	
1 Primary Control Station	Plant shutdown is performed from the Contro	I Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control	Room.		. ·
2.2 Reactivity Control - Maintain Sub Conditions	 Unit 2: Subcritical conditions are maintained boron dilution and by charging borated wate charging pump. 			
	 Unit 1: Subcritical conditions are maintained boron dilution and by charging borated wate charging pump, Train B charging pump or s A/Train B power. 	er from the RWST using Train A		
3.1 RCS Inventory Control - RCS Ma	 • Unit 2: RCS inventory is controlled using Tr the RWST. 	ain A charging pump aligned to		
	 Unit 1: RCS inventory is controlled using Tr charging pump or swing charging pump via the RWST. 			
3.2 RCS Inventory Control - Isolate I Paths	 • Unit 2: Normal letdown is isolated using orif letdown is isolated using one or more exces isolation valves. PZR PORV leakage paths and Train B PORV. The RCS to RHR high/l using the Train A/Train B RHR inboard isola 	s letdown or containment are isolated using Train A PORV ow pressure interface is isolated		
	 Unit 1: Normal letdown is isolated using orif isolation valve, or a letdown path containment letdown is isolated using one or more excessisolation valves. PZR PORV leakage paths and Train B PORV. The RCS to RHR high/lusing the Train A/Train B RHR inboard isolated RHR outboard isolation valve. 	ent isolation valve. Excess is letdown or containment are isolated using Train A PORV ow pressure interface is isolated		
3.3 RCS Inventory Control - RCP Se	al Integrity • Unit 2: Maintain RCP Seal Integrity - RCP s performance-based approach tripping all RG seal injection using Train A charging pump, RCP thermal barriers. RCP seal injection pa supply and discharge seal injection lines. C isolated using containment isolation valves barrier isolation valve.	CPs, maintaining normal and preventing failure of the aths are secured by isolating the CW to RCP thermal barriers are		
	 Unit 1: Maintain RCP Seal Integrity - RCP s tripping all RCPs, maintaining normal seal i pump, Train B charging pump or swing cha 	njection using Train A charging		
Fire Safety Analysis Data Manager (4.1)	Farley	Run: 08/18/2012 22:09	Page: 1416 of 2430

Performance Goal 4.1 RCS Pressure Control - Pressure Tra 4.2 RCS Pressure Control - Positive Presy	Method of Accomplishment power, and preventing failure of the RCP thermal barriers. RCP seal inject paths are secured by isolating the supply and discharge seal injection line CCW to RCP thermal barriers are isolated using containment isolation value or the CCW to RCP thermal barrier isolation valve. Indesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergized all pressurizer heater groups.	s. ves	
	 paths are secured by isolating the supply and discharge seal injection line CCW to RCP thermal barriers are isolated using containment isolation val- or the CCW to RCP thermal barrier isolation valve. nsient Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizi 	s. ves	
	ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergiz	ing	
4.2 RCS Pressure Control - Positive Pres			
Control	 Unit 2: Positive control of RCS pressure is accomplished with performance based approach Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group B for pressure increase. 		
	 Unit 1: Positive control of RCS pressure is accomplished with Train A POF Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase. 		
5 Decay Heat Removal	 Unit 2: Decay heat removal during HSD is accomplished using performance based approach Train A MDAFW, Train B MDAFW pump, or TDAFW pum supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 		
	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Stea Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldow 		
6 Process Monitoring	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer leve monitored by PZR level Ch 2. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Leve Performance-based-approach Steam Generator 2A/2B/2C level is monitored. 	el is	
	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wid range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer leve monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loo 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 	de el is	
Fire Safety Analysis Data Manager (4.1)	Farley	Run: 08/18/2012 22:09	Page: 1417 of 2430



Fire Area ID: Compliance Basis:		uilding 305, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 305, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
7.1 Vital Auxiliaries Electrical		• Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
		• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries Service V	Vater	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non- essential turbine building loads isolated.		
7.3 Vital Auxiliaries Component Cooling Water		 Unit 2: Train A component cooling water is provided with non-essential loads isolated. 		
		 Unit 1: Train A/Train B component cooling water is provided with non- essential loads isolated. 		
7.4 Vital Auxiliaries HVAC		 Unit 2: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with performance-based approach HVAC equipment corresponding to the service water train. 		
		 Unit 1: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train. 		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

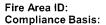
Run: 08/18/2012 22:09 Page: 1418 of 2430

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	<i>,</i>
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as v such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a doc rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described, Elements with construction features equal to 3-hr boundaries were credited as such, The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the 	hazard.

. .

÷





>

Required Fire Protection Systems and Features

2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach

Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-102	Risk Criteria	Required to meet risk criteria.
Detection	2A-102 [2192]	Risk Criteria	Required to meet risk criteria.
Detection	2A-102 [2192]	DID Criteria	Required to meet DID criteria.
Detection	2A-102 [2193]	Risk Criteria	Required to meet risk criteria.
Detection	2A-106	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-106	Risk Criteria	Required to meet risk criteria.
Detection	2A-119	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-119	Risk Criteria	Required to meet risk criteria.
Detection	2A-27	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-27	Risk Criteria	Required to meet risk criteria.
Detection	2A-62	Risk Criteria	Required to meet risk criteria.
Detection	2A-62 [2190]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-62 [2190]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-27	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-27	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-62	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-62 [2190]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-62 [2190]	Risk Criteria	Required to meet risk criteria.
Passive	Curbs	> EEEE/LA	Required to support a fire area boundary evalualtion.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Modifications		Risk Criteria	Modification to replace trip device in panel Q2R42B0001A, breaker LA20.
Modifications		DID Criteria	Modification required to plumb air from emergency air compressor header to AFW flow control valve

.

. 1

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Risk Evaluation with simplifying deterministic assumptions	Fire Risk Evaluatio
Title	FRE for Fire Area 2-006		
Summary	A risk-informed, performance-based fire risk evaluation was performed NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based or safety margins. The fire risk evaluation determined that with the modific depth, and safety margin criteria were satisfied.	n the measured change in CDF and LERF and the maintenance of	defense in depth and
Δ CDF	6.16E-08		
ΔLERF	1.06E-10		
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the modification required to plumb air from emergency air compressor header to AFW flow control valve and the installed detection system was identified as required for DID.		ea. As a result of the
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted to criteria in the licensing basis (e.g., FSAR, supporting analyses) have be uncertainty. As such, the Safety Margins are maintained.		
Comments			







•

Attachment C

Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-006-HVAC-001
VFDR	Q2N23P0001A:OFF:ON/OFF, 2A MDAFW PUMP - This component, AFW Pump 2A/2B, requires HVAC support to remain functional. The Auxiliary Feed water Pump is required to supply feed water to the Steam Generators in order to remove decay heat. Furthermore, a loss of the associated Pump Room Coolers due to fire induced circuit failure could prevent the availability of Pump 2A or 2B. Failure to ensure the availability of Pump 2A or 2B challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-IA-001
VFDR	Q2E21V0243:CLOSED:CLOSED, RCS ALTERNATE CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the alternate charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Alternate Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-IA-002
VFDR	Q2E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the normal charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Normal Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the aux spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-006-IA-003
VFDR	Q2E21V0245:CLOSED:CLOSED, RCS PRESSURIZER AUX SPRAY - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. This valve is required to cycle in order to supply CVCS inventory to the pressurizer to de-pressurize via aux-spray, and the valve fails closed on a loss of instrument air. An inability to cycle this valve due to a loss of instrument air would prevent de-pressurization of the RCS via aux-spray. Failure to ensure cycling capability of this valve challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-IA-004
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A loss of instrument air will result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-IA-005
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Atmospheric relief on the secondary side is necessary in order to achieve a controlled cool down rate. Failure to modulate the SG 2A ARV due to a loss of instrument air would cause the valve to fail closed, thereby isolating the secondary side. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-006-IA-006
VFDR	Q2N23HV3227A:OPEN:THROTTLED, AFW SUPPLY TO STEAM GENERATOR 1A - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. In order to achieve a controlled cool-down rate, the ability to control Feed water Flow along the AFW Discharge path is necessary. The MDAFW Flow Control Valve HV3227A is throttled in order to control Feed water Flow. A loss of instrument air could result in the valve failing in the open position (Thereby preventing the ability to control flow). Failure to ensure the availability of FCV HV3227A challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-006-IA-007
VFDR	Q2N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1B - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Decay Heat Removal via SG 2A is sought after in this Fire Area. Feed water admission to non-credited Steam Generators such as SG 2B therefore must be isolated. Valve HV3228B if not closed, would admit feed water to SG2B if the TDAFW Pump spuriously starts. A loss of instrument air could result in the valve failing in the open position. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-IA-008
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1C - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Decay Heat Removal via SG 2A is sought after in this Fire Area. Feed water admission to non-credited Steam Generators such as SG 2C therefore must be isolated. Valve HV3228C if not closed, would admit feed water to SG2C if the TDAFW Pump spuriously starts. A loss of instrument air could result in the valve failing in the open position. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-006-SEP-001	
VFDR	Q2B41P0001C:ON:OFF, RCP 2C - In order to support a natural circulation cool down, the Reactor Coolant Pumps must be tripped. Fire induced circuit damage could spuriously start the Reactor Coolant Pump 2C. Failure to ensure the Reactor Coolant Pumps are tripped challenges the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-006-SEP-002	
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Atmospheric relief on the secondary side is necessary in order to achieve a controlled cool down rate. Failure to modulate the SG 2A ARV due to fire induced circuit failure would cause the valve to fail closed, thereby isolating the secondary side. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-006-SEP-003	
VFDR	Q2N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric relief must be isolated on the secondary side initially. Spurious opening of the Atmospheric Relief Valve PV3371A could result from fire induced circuit failure. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

~

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-006-SEP-004
VFDR	Q2N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric relief must be isolated on the secondary side initially. Spurious opening of the Atmospheric Relief Valve PV3371B (SG 2B) could result from fire induced circuit failure. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
 VFDR IØ	U2-2-006-SEP-005
VFDR	Q2N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric relief must be isolated on the secondary side initially. Spurious opening of the Atmospheric Relief Valve PV3371C (SG 2C) could result from fire induced circuit failure. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-006
VFDR	Q2N11V0001B:OPEN:CLOSED, 2B SG MSIV - Main Steam Isolation is sought after, to ensure that the Main Feed water Pumps are tripped, and no steam admission occurs to these pumps. The MSIVs provide a steam admission path to start the Main Feed water Pumps, and hence steam the appropriate generator. Spurious opening or failure to close MSIV 2B through fire induced circuit failure could result in an RCS overcooling condition. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-006-SEP-007

.

Compliance Basis:	2-006 - Aux Building VFDF Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
/FDR	Q2N11V0001C:OPEN:CLOSED, 2C SG MSIV - Main Steam Isolation is sought after, to ensure that the Main Feed water Pumps are tripped, and no steam admission occurs to these pumps. The MSIVs provide a steam admission path to start the Main Feed water Pumps, and hence steam the appropriate generator. Spurious opening or failure to close MSIV 2C through fire induced circuit failure could result in an RCS overcooling condition. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
/FDR ID	U2-2-006-SEP-008	
/FDR	Q2N11V0002A:OPEN:CLOSED, 2A SG MSIV - Main Steam Isolation is sought after, to ensure that the Main Feed water Pumps are tripped, and no steam admission occurs to these pumps. The MSIVs provide a steam admission path to start the Main Feed water Pumps, and hence steam the appropriate generator. Spurious opening or failure to close MSIV 2A through fire induced circuit failure could result in an RCS overcooling condition. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
/FDR ID	U2-2-006-SEP-009	
/FDR	Q2N23HV3227A:OPEN:THROTTLED, AFW SUPPLY TO STEAM GENERATOR 1A - In order to achieve a controlled cool-down rate, the ability to control water Flow along the AFW Discharge path is necessary. The MDAFW Flow Control Valve HV3227A is throttled in order to control Feed water Flow. Fire in circuit failure could cause this valve to spuriously close thereby isolating the Feed water supply, or fail in the open position (Thereby preventing the ability to control flow). Failure to ensure the availability of FCV HV3227A challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	U2-2-006-SEP-010	

.

1

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2P16FV3009C:OPEN:OPEN, SW FROM 2C CCW HX - Component cooling water is required to cool the charging pumps as well as support RHR (Cold Shutdown, NPO) activities. Fire induced circuit failure to the Component Cooling Water SW Discharge valve (Q2P16FV3009C) resulting in spurious closure of the valve, could isolate the credited discharge path for CCW. Failure to ensure the availability of CCW challenges the RCS Pressure/Inventory Control and Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-011
VFDR	Q2P17P0001C:STANDBY:ON, 2C COMPONENT COOLING WATER PUMP - The Component Cooling Water Pumps are required to circulate component cooling water to support cooling of the charging pumps. Fire induced circuit failure to Charging Pump 2B Train A or Charging Pump 2C could prevent use of the pump in this Fire Area. Failure to establish CCW challenges the RCS Inventory/Pressure Control and Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disp <i>o</i> sition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-012
VFDR	N2N11LR0477:AVAILABLE-LT477:AVAILABLE-LT477, 2A, 2B, 2C STEAM GENERATOR WIDE RANGE LEVEL RECORDER - Decay Heat removal via SG 2A is desired in this Fire Area. SG Level Indication at the control room (or local control center) is required in order to monitor decay heat removal through the steam generators. Fire induced circuit failure to L10474, L10475, L10476, or L10477 could prevent these indicators from being available at the control room. These failures challenge the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-013

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - The circuit failures to the charging pump 2B (Train A) and the sequencer will not result in spurious start of the charging pump, but only prevent its operation, remotely. Hence if the pump is normally running, control power may not be available to remotely trip the pump. This failure may result in an overcharging condition and challenge the RCS Inventory Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-014
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. Fire induced circuit failure to the control circuitry of the valve could result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-015
VFDR	Q2N11V0003D:CLOSED:CLOSED, 2A SG MSIV BYPASS - Main Steam Isolation is sought after, to ensure that the Main Feed water Pumps are tripped, and no steam admission occurs to these pumps. The MSIV Bypass Valves HV3976A and 3368A provide a steam admission path to start the Main Feed water Pumps, and hence steam the appropriate generator. Spurious opening or failure to close the MSIV Bypass Valves due to fire induced circuit failure could result in an RCS overcooling condition. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-016
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1429 of 2430



Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach				
VFDR	Q2N11V0003E:CLOSED:CLOSED, 2B SG MSIV BYPASS - Main Steam Isolation is sought after, to ensure that the Main Feed water Pumps are tripped, and no steam admission occurs to these pumps. The MSIV Bypass Valves HV3976B and 3368B provide a steam admission path to start the Main Feed water Pumps, and hence steam the appropriate generator. Spurious opening or failure to close the MSIV Bypass Valves due to fire induced circuit failure could result in an RCS overcooling condition. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-006-SEP-017				
VFDR	Q2N11V0003F:CLOSED:CLOSED, 2C SG MSIV BYPASS - Main Steam Isolation is sought after, to ensure that the Main Feed water Pumps are tripped, and no steam admission occurs to these pumps. The MSIV Bypass Valves HV3976C and 3368C provide a steam admission path to start the Main Feed water Pumps, and hence steam the appropriate generator. Spurious opening or failure to close the MSIV Bypass Valves due to fire induced circuit failure could result in an RCS overcooling condition. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-006-SEP-018				
VFDR	Q2N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1B - Decay Heat Removal via SG 2A is sought after in this Fire Area. Feed water admission to non-credited Steam Generators such as SG 2B therefore must be isolated. Valve HV3228B if not closed, would admit feed water to SG2B if the TDAFW Pump spuriously starts. Fire induced circuit failure of this valve or a loss of power from the TDAFW UPS could result in the valve failing in the open position. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-006-SEP-019
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1C - Decay Heat Removal via SG 2A is sought after in this Fire Area. Feed water admission to non-credited Steam Generators such as SG 2C therefore must be isolated. Valve HV3228C if not closed, would admit feed water to SG2C if the TDAFW Pump spuriously starts. Fire induced circuit failure of this valve or a loss of power from the TDAFW UPS could result in the valve failing in the open position. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-020
VFDR	Q2N23V0025B:OPEN:CLOSED, MDAFWP TO 2B STEAM GENERATOR ISOLATION - Decay Heat Removal via SG 2A is sought after in this Fire Area. Feed water admission to non-credited Steam Generators such as SG 2B therefore must be isolated. Valves 3764B, 3764D and HV3227B are located in series and control feed water flow to SG 2B, and one of these valve must close/remain closed. Fire induced control circuit damage to MOVs 3764B and 3764D could render these valves inoperable from the control room and prevent closure and/or result in spurious opening of these valves. Furthermore, fire induced circuit failure of HV3227B could result in the valve failing open as would a loss of instrument air to this valve. These failures challenge the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-021
VFDR	Q2N23V0025C:OPEN:CLOSED, MDAFWP TO 2C STEAM GENERATOR ISOLATION - Decay Heat Removal via SG 2A is sought after in this Fire Area. Feed water admission to non-credited Steam Generators such as SG 2C therefore must be isolated. Valves 3764C, 3764F and HV3227C are located in series and control feed water flow to SG 2C, and one of these valve must close/remain closed. Fire induced control circuit damage to MOVs 3764C and 3764F could render these valves inoperable from the control room and prevent closure and/or result in spurious opening of these valves. Furthermore, fire induced circuit failure of HV3227C could result in the valve failing open as would a loss of instrument air to this valve. These failures challenge the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Attachment C

t

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-022
VFDR	Q2N23P0001A:OFF:ON/OFF, 2A MDAFW PUMP - The Motor Driven Auxiliary Feed water Pump is required to supply feed water to the Steam Generators in order to remove decay heat. Fire induced circuit failure along with the pump being physically present in this fire area could prevent operation of the Motor Driven AFW Pumps. Failure to ensure the availability of Pump 2A or 2B challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disp <i>o</i> sition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-006-SEP-023
VFDR	Q2P15SV3765:CLOSED:OPEN/CLOSED, RCS HOT LEG SAMPLE ISOLATION SOLENOID - The Sampling System must remain isolated at all times in order to ensure that RCS Inventory losses do not inadvertently occur. Spurious opening of the RCS Sample Isolation Valves SV3333 or SV3765 due to fire induced circuit failure could result in an inadvertent diversion flow path for RCS Inventory. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-006-SEP-024
VFDR	Q2P15SV3104:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM SAMPLE ISOLATION - The Sampling System must remain isolated at all times in order to ensure that RCS Inventory losses do not inadvertently occur. Spurious opening of the Pressurizer Sample Gas Isolation Valves SV3104 or SV3331 due to fire induced circuit failure could result in an inadvertent diversion flow path for RCS Inventory. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-006 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			
VFDR ID	U2-2-006-SEP-025			
VFDR	Q2P15SV3103:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID SAMPLE ISOLATION - The Sampling System must remain isolated at all times in order t ensure that RCS Inventory losses do not inadvertently occur. Spurious opening of the Pressurizer Sample Liquid Isolation Valves SV3103 or SV3332 due to induced circuit failure could result in an inadvertent diversion flow path for RCS Inventory. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	o fire		
Disposition	• This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			





re Area ID: ompliance Basis:	2-008-U1 - Aux Buildin NFPA 805, Section 4.2	Cable Chase, Room 2116 2 Performance-Based Approach - Fire F	Risk Evaluation with sir	nplifying deterministic	assumptions	Fire Area Definitio
Fire Zone ID 2116-U1	Description 2116 Cable Chase			1		
				9		
				:		
				· ·		
				1		

·.16*

Fire Area ID: Compliance Basis:	2-008-U1 - Aux B NFPA 805, Sectio	uilding Cable Chase, Room 2116 on 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifyir	ng deterministic assumptions	Performance Goals
Performance Goal	·	lethod of Accomplishment	Comments	
Primary Control Station	F	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor	Trip F	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Conditions	d p	subcritical conditions are maintained by isolating the VCT to prevent boron ilution and by charging borated water from the RWST using Train A charging ump, Train B charging pump or swing charging pump via Train A/Train B ower.]	
3.1 RCS Inventory Control - RC		CS inventory is controlled using Train A charging pump, Train B charging ump or swing charging pump via Train A/Train B power aligned to the RWST	r. '	
3.2 RCS Inventory Control - Isol Paths	v is P T	lormal letdown is isolated using orifice isolation valves, a letdown isolation alve, or a letdown path containment isolation valve. Excess letdown is solated using one or more excess letdown or containment isolation valves. ZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the rain A/Train B RHR inboard isolation valve and Train A/Train B RHR utboard isolation valve.		
3.3 RCS Inventory Control - RC	F C P S F	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B harging pump or swing charging pump via Train A/Train B power, and reventing failure of the RCP thermal barriers. RCP seal injection paths are ecured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the SCW to RCP thermal barrier isolation valve.	3	
I.1 RCS Pressure Control - Pre	e R	Indesired depressurization due to inadvertent spray is prevented by nsuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 CPs are shut off. Undesired pressure increase is prevented by deenergizing Il pressurizer heater groups.	J	
4.2 RCS Pressure Control - Pos Control	P	ositive control of RCS pressure is accomplished with Train A PORV, Train B ORV or aux spray for pressure reduction and Pressurizer Heater Group A/B or pressure increase.		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1435 of 2430





10

	008-U1 - Aux Building Cable Chase, Room 2116 FPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	Aux Building Cable Chase, Room 2116 Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Performance Goal	Method of Accomplishment	Comments		
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.			
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored.	:		
7.1 Vital Auxiliaries – Electrical	 Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 			
7.2 Vital Auxiliaries – Service Water	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.			
7.3 Vital Auxiliaries – Component C Water	Doling Train A/Train B component cooling water is provided with non-essential loads isolated.			
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.			

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Although the sprinkler flow capacity may exceed drainage capacity, all water will drain to the bottom of the chase below elevation 100'. This will not impact the adjacent space or cables in the chase. Fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-008-U1 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, a such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a crated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described, Elements with construction features equal to 3-hr boundaries were credited as such, 	

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

:

	008-U1 - Aux Building Cable Chase, Room 2116 FPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalu		Required Fire Protection Systems and Feature valuation with simplifying deterministic assumptions		
Required FP System(s)/Feature(s	Description	Required By	Comments		
Detection	2A-53	EEEE/LA	Required to support a fire area boundary evaluation.		
Detection	2A-53	Risk Criteria	Required to meet risk criteria.		
Detection	2A-53	DID Criteria	Required to meet DID criteria.		
Water Suppression	2A-53	EEEE/LA	Required to support a fire area boundary evaluation.		
Water Suppression	2A-53	Risk Criteria	Required to meet risk criteria.		
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.		

1

Fire Area ID: Compliance Basis:	2-008-U1 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-008-U1
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	1.83E-10
ΔLERF	4.08E-13
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	



Fire Area ID: Compliance Basis:	2-008-U1 - Aux Building Cable Chase, Ro NFPA 805, Section 4.2.4.2 Performance-		with simplifying deterministic ass	umptions	VFDRs		
/FDR ID	U1-2-008-SEP-001	U1-2-008-SEP-001					
VFDR	Q1R17B0509:ENERGIZED:ENERGIZED required energized to support EDG 1-2A. Performance Criteria. This condition repre Evaluate for compliance using the perform	Fire induced cable damage can disable sents a variance from the deterministic	the diesel generator to load onto requirements of Section 4.2.3 of	Bus 1F and a challenge t	o all Nuclear Safety		
Disposition		This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.					
VFDR ID	U1-2-008-SEP-002						
VFDR	Q1R43E0501A:AVAILABLE:AVAILABLE required energized to supply bus 1F. Fire Performance Criteria. This condition repre Evaluate for compliance using the perform	induced cable damage can disable the esents a variance from the deterministic	diesel generator to load onto Bu requirements of Section 4.2.3 of	s 1F, and a challenge to all	I Nuclear Safety		
Disposition	This condition was evaluated for compliar applicable risk, defense-in-depth, and saf			A fire risk evaluation deter	mined that		

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable NFPA 805, Section 4.2.4.2 Perf	Chase, Room 2116 ormance-Based Approach	- Fire Risk Evaluation with sim	plifying deterministic ass	sumptions	Fire Area Definition
Fire Zone ID 2116-U2	Description 2116 Cable Chase					
	•				:	
Fire Safety Analysis Data N	Manager (4.1)		Farley		Run: 08/18/2012 22:09	Page: 1441 of 2430



Fire Area ID: 2-008-U2 - Aux Compliance Basis: NFPA 805, Set	K Building Cable Chase, Room 2116 ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump aligned to Train B power.	,	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train B charging pump or swing charging pump via Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	•	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance -based approach tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves.		·
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with performance-based approach Train B PORV for pressure reduction and Pressurizer Heater Group B for pressure increase.		

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation	on with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using perfor approach Train B MDAFW pump supplying Steam Generator feed is isolated to prevent uncontrolled cooldown.	
6 Process Monitoring	1. Sutdown Margin - Performance-based approach shutdown monitored. 2. RCS Pressure - RCS pressure is monitored by range Ch 3, PZR non-safety channel, RCS wide range pressu Pressurizer Level - Performance-based approach pressurizer monitored by PZR level Ch 3. 4. RCS Temperature - Perform approach RCS Loop 3 temperature is monitored by loop hot a RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure monitored. 6. SG Level - Steam Generator 2A/2B/2C level is	PZR narrow re for Loop 1. 3. level is ance-based nd cold leg
7.1 Vital Auxiliaries – Electrical	 Electrical power is supplied by diesel generator EDG-2B. 600 V power is supplied by Train B distribution equipment. and 120 VAC power is supplied by Train B equipment. 	
7.2 Vital Auxiliaries – Service Wa	ater Train B service water is provided with two service water pump recirculating to the pond or Train B service water is provided v water pump in service recirculating to the pond and non-esser building loads isolated.	vith one service
7.3 Vital Auxiliaries Componer Water	t Cooling Train B component cooling water is provided with non-essenti	al loads isolated.
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room co- locations is provided with HVAC equipment corresponding to t train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Although the sprinkler flow capacity may exceed drainage capacity, all water will drain to the bottom of the chase below elevation 100'. This will not impact the adjacent space or cables in the chase. Fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Run: 08/18/2012 22:09 Page: 1443 of 2430





Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,	
	 The construction of the boundary and the potential issue with the element in question was described, 	
	 The fire hazards and fire protection features on both sides of the barrier were described, 	

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID:2-008-U2 - Aux Building Cable ChaseCompliance Basis:NFPA 805, Section 4.2.4.2 Performan		Room 2116 Required Fire Protection Systems and Feature e-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Required FP System(s)/Feature(s)	Description	Required By	Comments	
Detection	2A-53	EEEE/LA	Required to support a fire area boundary evaluation.	
Detection	2A-53	Risk Criteria	Required to meet risk criteria.	
Detection	2A-53	DID Criteria	Required to meet DID criteria.	
Water Suppression	2A-53	EEEE/LA	Required to support a fire area boundary evaluation.	
Water Suppression	2A-53	Risk Criteria	Required to meet risk criteria.	
Water Suppression	2A-53	DID Criteria	Required to meet DID criteria.	
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.	
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to me risk criteria.	
Modifications		Risk Criteria	Modification to provide fuse or other electrical isolation device at the DC shunt connection point and to replace trip device in panel Q2R42B0001A, breaker LA13.	
Modifications		DID Criteria	Modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available.	



.

1

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-008-U2
Summary A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic req NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of or safety margins. The fire risk evaluation determined that with the specified recovery actions, modification(s) and the installed detection/supp applicable risk, defense-in-depth, and safety margin criteria were satisfied.	
Δ CDF	1.21E-07
ΔLERF	1.09E-09
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available and the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	/FDR
VFDR ID	U2-2-008-IA-001	
VFDR	Q2B31V0061:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. The normally closed PORV value required to cycle to control RCS pressure transient. Fire induced damage to instrument air components may result in spuriously closing of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Sectio 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recover actions(s) are required to meet applicable risk criteria.	ery
	·	
VFDR ID	U2-2-008-SEP-001	
VFDR	N2B31LI0461:AVAILABLE:AVAILABLE, PRESSURIZER LEVEL INDICATOR LI-461 (PROTECTION CHANNEL III) - The indicator is normally available, required available at least one indicator from pressurizer level is required to provide process monitoring of RCS level. Fire induced cable result in failure to monitor the RCS level, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-008-SEP-003	
VFDR	Q2B41P0001C:ON:OFF, RCP 2C - The pump is normally running required off. Fire induced cable damage can prevent ability to trip pump, and a challenge the Reactor Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805. Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-008-SEP-004	
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1447 of 2	2430



Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage can spuriously open valve and prevent the ability to control steam generator pressure, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-008-SEP-005	
VFDR	Q2N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage can spuriously open valve and prevent the ability to control steam generator pressure, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disp <i>o</i> sition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-008-SEP-006	
VFDR	Q2N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage can spuriously open valve and prevent the ability to control steam generator pressure, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-008-SEP-007	
VFDR	Q2N12HV3234A:OPEN:OPEN/CLOSED, TDAFWP STEAM SUPPLY WARM-UP ISOLATION - The valve is normally open, required closed to prevent uncontrolled steam loss. Fire induced cable damage may fail valve open, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-008-SEP-008	
VFDR	Q2P15SV3103:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID SAMPLE ISOLATION - Q2P15SV3103 - Pressurizer Liquid Solenoid Valve and Q2P15SV3332 - Pressurizer Liquid Sample Isolation Valve. These valves are normally closed, required closed to isolate Pressurizer sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-008-SEP-009	
VFDR	Q2P15SV3104:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM SAMPLE ISOLATION - Q2P15SV3104 - Pressurizer Steam Solenoid Valve and Q2P15SV3331 - Pressurizer Steam Sample Isolation Valve. These valves are normally closed, required closed to isolate Pressurizer sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-008-SEP-010	
VFDR	Q2P15SV3331:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM TO GFFD ISOLATION - Q2P15SV3104 - Pressurizer Steam Solenoid Valve and Q2P15SV3331 - Pressurizer Steam Sample Isolation Valve. These valves are normally closed, required closed to isolate Pressurizer sample line. Fire cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for comp using the performance-based approach of NFPA 805, Section 4.2.4.	





Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-008-SEP-011	
VFDR	Q2P15SV3332:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID ISOLATION - Q2P15SV3103 - Pressurizer Liquid Solenoid Valve and Q2P15SV3332 - Pressurizer Liquid Sample Isolation Valve. These valves are normally closed, required closed to isolate Pressurizer sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-008-SEP-012	
VFDR	Q2P15SV3333:CLOSED:OPEN/CLOSED, RX LOOPS 2 AND 3 SAMPLE ISOLATION SOLENOID - Q2P15SV3765 - Reactor Coolant Hot Leg Solenoid Valve and Q2P15SV3333 - Reactor Coolant Hot Leg Sample Isolation Solenoid. These valves are normally closed, required closed to isolate hot leg sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-008-SEP-013	
VFDR	Q2P15SV3765:CLOSED:OPEN/CLOSED, RCS HOT LEG SAMPLE ISOLATION SOLENOID - Q2P15SV3765 - Reactor Coolant Hot Leg Solenoid Valve Q2P15SV3333 - Reactor Coolant Hot Leg Sample Isolation Solenoid. These valves are normally closed, required closed to isolate hot leg sample line. Fir induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performa Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-008-SEP-014	
VFDR	N2B21TR0410:AVAILABLE-TE410:AVAILABLE-TE410, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.	
VFDR ID	U2-2-008-SEP-015	
VFDR	N2B21TR0413:AVAILABLE-TE413:AVAILABLE-TE413, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N2B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.	
VFDR ID	U2-2-008-SEP-016	
VFDR	N2B21TR0410:AVAILABLE-TE420:AVAILABLE-TE420, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 2 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.	
	',	
	U2-2-008-SEP-017	
VFDR	N2B21TR0413:AVAILABLE-TE423:AVAILABLE-TE423, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N2B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 2 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.	
VFDR ID	U2-2-008-SEP-018	
VFDR	N2B21TR0410:AVAILABLE-TE430:AVAILABLE-TE430, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 3 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.	
VFDR ID	U2-2-008-SEP-019	
VFDR	N2B21TR0413:AVAILABLE-TE433:AVAILABLE-TE433, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N2B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 3 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

.

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.			
VFDR ID	U2-2-008-SEP-020			
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - Q2B31L0001A - Pressurizer Heater Group 2A Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage and control power supply failure can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-bas approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-021			
VFDR	Q2E13P0001A:ON:OFF, 2A CONTAINMENT SPRAY PUMP - Q2E13P0001A - 2A Containment Spray Pump and Q2E13V0005A - 2A CS Pump to Spray Header Isolation. The pump is normally off, required off and valve is normally closed required closed to prevent loss borated water source to sump. Fire ind cable damage to valve and failures of instruments generate a CSAS signal to spuriously start pump and open valve, and a challenge to the Reactivity Contr and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-022			
VFDR	Q2E13V0005A:OPEN:CLOSED, 2A CS PUMP TO SPRAY HEADER ISOLATION - ⁷ Q2E13P0001A - 2A Containment Spray Pump and Q2E13V0005A - 2A CS Pump to Spray Header Isolation. The pump is normally off, required off and valve is normally closed required closed to prevent loss borated water source to sump. Fire induced cable damage to valve and failures of instruments generate a CSAS signal to spuriously start pump and open valve, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Sectior 4.2.4.			







Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-023			
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - Q2E21P0002A - 2A Charging/HHSI Pump; Q2E21P0002B - 2B Charging/HHSI Pump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required off, required off; sequencer normally available, required available, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-024			
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - Q2E21P0002A - 2A Charging/HHSI Pump; Q2E21P0002B - 2B Charging/HHSI Pump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required off, required off; sequencer normally available, required available, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-025			
VFDR	Q2R41L0001B:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 2B - Q2E21P0002A - 2A Charging/HHSI Pump; Q2E21P0002B - 2B Charging/HHSI Rump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required sequencer normally available, required available, and panel normally energized, required energized to turn off pump to prevent overcharging, and a cl the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requiremen Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-008-SEP-026				
VFDR	Q2R43E0001A:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2F - Q2E21P0002A - 2A Charging/HHSI Pump; Q2E21P0002B - 2B Charging/HHSI Pump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required off, sequencer normally available, required available, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-008-SEP-027				
VFDR	Q2E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - The valve is normally closed, required closed to prevent charging pump run out. Fire induced damage generates SIAS signal to cause failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-008-SEP-028				
VFDR	Q2E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - The valve is normally open, required to open to maintain RCS inventory. Fire induced damage to instruments generate a spurious SIAS signal to close the valve preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				





Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions				
VFDR ID	U2-2-008-SEP-029				
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - The valve is normally modulated, required modulated to provide makeup. Fire induced cable damage, instrument air components failure and cascading power supply failures can prevent makeup, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-008-SEP-030				
VFDR	Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valves are normally open, required open to supply VCT to charging pump. Fire induced damage to instruments generates a SIAS that can spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-008-SEP-031				
VFDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valves are normally open, required open to supply VCT to charging pump. Fire induced damage to instruments generates a SIAS that can spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
	U2-2-008-SEP-032				

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2E11P0001A:OFF:ON/OFF, 2A RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001A - Sequencer Bus 2F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal and / or damage to sequencer may spuriously start pump, and challenge the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-033			
VFDR .	Q2E11P0001B:OFF:ON/OFF, 2B RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001A - Sequen Bus 2F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO-mode shutdown. Fire induced damage generates a Si signal and / or damage to sequencer may spuriously start pump, and challenge the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-034			
VFDR	Q2R43E0001A:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2F - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001A - Sequencer Bus 2F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal and / or damage to sequencer may spuriously start pump, and challenge the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-035			

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1457 of 2430







Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic	e assumptions			
VFDR	31A and Q1R21L0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Ir Instrument Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the F	BLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31A - N2C55NI0031A - Source Range Count Rate Indicator NI- - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indicator NI-32A and Q2R21L0001B - 120V Vital AC e indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply y to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance presents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for formance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4 applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not m				
VFØR ID	U2-2-008-SEP-036				
VFDR	31A and Q1R21L0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Ir Instrument Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the F	VAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32A - N2C55NI0031A - Source Range Count Rate Indicator NI- 0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indicator NI-32A and Q2R21L0001B - 120V Vital AC 2B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply e ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance lition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4 applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not m	.2.4. A fire risk evaluation determined that odeled in Fire PRA).			
VFDR ID	U2-2-008-SEP-037				
VFDR	and Q1R21L0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indica Instrument Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the F	1L0001A:ENERGIZED:ENERGIZED, 120V VITAL AC INSTRUMENTATION PANEL 2A - N2C55NI0031A - Source Range Count Rate Indicator NI-31A 1R21L0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indicator NI-32A and Q2R21L0001B - 120V Vital AC nent Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply s prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance a. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for iance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).				
VFDR ID	U2-2-008-SEP-038				
Fire Safety Analysis Data	ta Manager (4.1) Farley	Run: 08/18/2012 22:09 Page: 1458 of 243			

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2 NFPA 805, Section 4.2.4.2 Performance-Base	2116 d Approach - Fire Risk Evaluation with simplifying o	deterministic assumptions	VFDR	
VFDR	and Q1R21L0001A - 120V Vital AC Instrumen Instrument Panel 2B. The indicator is normally failures prevent the ability to monitor the achie Criteria. This condition represents a variance fi	JERGIZED, 120V VITAL AC INSTRUMENTATION PANEL 2B - N2C55NI0031A - Source Range Count Rate Indicator NI-31A AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indicator NI-32A and Q2R21L0001B - 120V Vital AC itor is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply nitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance ts a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for ice-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance u applicable risk, defense-in-depth, and safety m	sing the performance-based approach of NFPA 80 pargin criteria were satisfied without further action (5, Section 4.2.4. A fire risk evaluation deter VFDR not modeled in Fire PRA).	mined that	
VFDR ID	U2-2-008-SEP-039				
VFDR	Fire induced cable damage, instrument air con challenge the Decay Heat Removal Nuclear Sa	1A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required modulate to control steam generator pressure. able damage, instrument air components failures and cascading power supply failures prevent the ability to control steam generator pressure, and Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition		s evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that fense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-040				
VFDR	Fire induced cable damage, instrument air con challenge the Decay Heat Removal Nuclear Sa	D:MODULATE, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required modulate to control steam generator pressure. ge, instrument air components failures and cascading power supply failures prevent the ability to control steam generator pressure, and at Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition		was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that , defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-041				
	· ·				
Fire Safety Analysis Data Mar	nager (4.1)	Farley	Run: 08/18/2012 22:09	Page: 1459 of 2430	



Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDR		
VFDR	Q2N11PV3371C:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required modulate to control steam generator pressure, Fire induced cable damage, instrument air components failures and cascading power supply failures prevent the ability to control steam generator pressure, challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-042			
VFDR	Q2N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and cascading power failure can generate actuation signal that can spuriously operate valve, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NF 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-043			
VFDR	Q2N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and cascading power failure can generate actuation signal that can spuriously operate valve, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NF 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-044			

Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1A - Q2N23P0002 - TDAFW Pump; Q2N23HV3228A - TDAFW Supply to Steam Generator 1A. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-045			
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228A - TDAFW Supply to Steam Generator 1A. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-046			
VFDR	Q2N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1B - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply Steam Generator 1B. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam genera and overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and challenge the De Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
	U2-2-008-SEP-047			

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1461 of 2430



Fire Area ID: Compliance Basis:	2-008-U2 - Aux Building Cable Chase, Room 2116 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply to Steam Generator 1B. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator an overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805 This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-048			
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1C - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 1C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-008-SEP-049			
VFØR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 1C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and challenge the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			

3

Fire Zone ID 2117-U1 2246-U1	Description 2117 Cable Chase 2246 Cable Chase				
			. 1		
				·	





	x Building Cable Chase, Rooms 2117 & 2246 ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	g deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room OR Plant shutdown is performed from the Hot Shutdown Panel.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room OR Reactor is manually tripped from the Control Room prior to Control Room evacuation.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump via Train A power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	

	IX Building Cable Chase, Rooms 2117 & 2246 action 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.		
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C level is monitored.	;	
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries – Service Water	Train A service water is provided with two service water pumps in service recirculating to the pond or Train A service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Component Cooling Water	Train A component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		



Fire Area ID:	2-009-U1 - Aux Building Cable Chase, Rooms 2117 & 2246	Performance Goals
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	

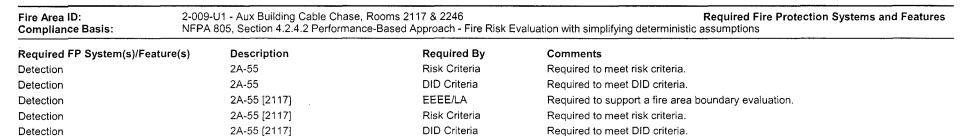
Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Although the sprinkler flow capacity may exceed drainage capacity, all water will drain to the bottom of the chase below elevation 100'. This will not impact the adjacent space or cables in the chase. Fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-009-U1 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,
	• Elements with construction features equal to 3-br boundaries were credited as such

Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.



Required to meet risk criteria.

Required to meet risk criteria.

Required to support a fire area boundary evaluation.

Required to support a fire area boundary evaluation.

Risk Criteria

Risk Criteria

EEEE/LA

EEEE/LA

Water Suppression

Water Suppression

Water Suppression

Passive

2A-55

2A-55 [2117]

2A-55 [2117]

Restricted transient controls

Fire Area ID: Compliance Basis:	2-009-U1 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-009-U1
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	2.87E-09
ΔLERF	1.01E-11
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	







Fire Area ID: Compliance Basis:	2-009-U1 - Aux Building Cable Chase, Rooms 2117 & 2246 VFDRs NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-2-009-SEP-001
VFDR	Q1P16V0592:CLOSED:CLOSED, SW TO D/G 2B - Q1P16V0592 - SW to D/G 1B. The valve is normally closed, required closed to prevent crosstie of service water system. Fire induced cable damage can cause spurious valve operation and prevent adequate service water support to the diesel generator, and a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

ire Area ID: ompliance Basis:	2-009-U2 - Aux Building 0 NFPA 805, Section 4.2.4.	Cable Chase, Rooms 2117 2 Performance-Based App	& 2246 proach - Fire Risk Evaluation	with simplifying deterministic	assumptions	Fire Area Definitio
Fire Zone ID 2117-U2 2246-U2	Description 2117 Cable Chase 2246 Cable Chase					
2240-02	2240 Cable Chase					
						5
	<i>i</i>					
re Safety Analysis Data N	Janager (4, 1)		Farley		Run: 08/18/2012 22:09	Page: 1471 of 243
	алады (ч .т <i>)</i>		Falley		Run. 00/10/2012 22.09	r age. 1471 01 243

x Building Cable Chase, Rooms 2117 & 2246 ection 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions
Method of Accomplishment	Comments
Plant shutdown is performed from the Control Room.	
Reactor is manually tripped from the Control Room.	
Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump aligned to Train A power.	
RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.	
Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and performance-based approach Train B PORV or block valve. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR outboard isolation valve.	
Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance -based approach tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
Undesired depressurization due to inadvertent spray is prevented by ensuring performance-based approach auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are performance-based approach shut off. Undesired pressure increase is prevented by performance-based appraoch deenergizing all pressurizer heater groups.	
Positive control of RCS pressure is accomplished with performance-based appraoch Train A PORV for pressure reduction and Pressurizer Heater Group A for pressure increase.	
	 ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying Method of Accomplishment Plant shutdown is performed from the Control Room. Reactor is manually tripped from the Control Room. Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump aligned to Train A power. RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST. Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using ontainment isolation valves. PZR PORV leakage paths are isolated using train A PORV and performance-based approach Train B PORV or block valve. The RCS to RHR high/low pressure interface is isolated using Train A Charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection using Train A charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection using Train A charging pump via discharge seal injection paths are secured by isolating the supply and discharge seal injection nabers. CCW to RCP thermal barriers are isolated using containment isolation valve. Undesired depressurization due to inadvertent spray is prevented by ensuring performance-based approach auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are performance-based approach shut off. Undesired pressurie increase is prevented by performance-based approach deenergizing all pressurizer heater groups. Positive control of RCS pressure is accomplished with performance-based approach Train A PORV for pressure reduction and Pressurizer Heater Group

Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with	h simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MD, supplying Steam Generator 2B. Main feed is isolated to prevent unc cooldown.	
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source rang Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR i range Ch 1/Ch 2, RCS wide range pressure for Loop 3. 3. Pressuri Pressurizer level is monitored by PZR level Ch 1/Ch 2. 4. RCS Ten RCS Loop 1/Loop 2 temperature is monitored by loop hot and cold RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored	narrow izer Level - nperature - leg
7.1 Vital Auxiliaries – Electrical	 Electrical power is supplied by diesel generator EDG1-2A. 4. 600 V power is supplied by Train A/Train B distribution equipment. VDC power and 120 VAC power is supplied by Train A/Train B equiplied by Train B equiplied by Tra	3. 125
7.2 Vital Auxiliaries – Service Wa	Train A service water is provided with two service water pumps in service vater is provided with or Train A service water is provided with or water pump in service recirculating to the pond and non-essential tubuilding loads isolated.	ne service
7.3 Vital Auxiliaries – Component Water	Cooling Train A component cooling water is provided with non-essential load	ds isolated.
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A HVAC. Room cooling a locations is provided with performance-based approach HVAC equit corresponding to the service water train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Although the sprinkler flow capacity may exceed drainage capacity, all water will drain to the bottom of the chase below elevation 100'. This will not impact the adjacent space or cables in the chase. Fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.







Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 Engineering Evaluation with simplifying deterministic assumptions Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

5

	2-009-U2 - Aux Building Cable Chase, Room NFPA 805, Section 4.2.4.2 Performance-Bas		Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions
Required FP System(s)/Feature(s) Description	Required By	Comments
Detection	2A-55	Risk Criteria	Required to meet risk criteria.
Detection	2A-55	DID Criteria	Required to meet DID criteria.
Detection	2A-55 [2117]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-55 [2117]	Risk Criteria	Required to meet risk criteria.
Detection	2A-55 [2117]	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-55	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-55	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-55 [Zone 2117]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-55 [Zone 2117]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-55 [Zone 2117]	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Passive	Restricted transient controls	DID Criteria	Required to meet DID criteria.
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to m risk criteria.
Modifications		Risk Criteria	Modification to wrap cables 2VYH2C05B, 2VYDG01 J with 1 hr fire rated wrap to pre- fire damage due to transient fire and HGL.





Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-009-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions, modification(s), enhanced transient restrictions and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	3.77E-07
ΔLERF	8.79E-08
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, enhanced transient restrictions and the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

ţ

T.

Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-2-009-ASSO-001	
VFDR	Q2R15A0006:ENERGIZED:ENERGIZED-EDG1-2A, 4160V SWITCHGEAR BUS 2F - Power is required to be available at the vital AC Buses in order to provide electrical support to various safe shutdown components. The offsite power supplies to Bus 2F cannot be guaranteed to be available because of a loss of over current protection at the Start Up Transformer Supply. The Diesel Generator supply may not remain available due a potential loss of coordination. A fault on the cited cable coupled with a loss of control power to the respective load breaker, could lead to an ultimate loss of Bus 2F. Failure to establish electrical power at Bus 2F challenges all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-ASSO-002	
VFDR	Q2R16B0002:ENERGIZED:ENERGIZED-LC2D, 600V LOAD CENTER 2A NORMAL-EMERGENCY - A fault on this power cable, concurrent with a loss of control power to the associated breaker, could cause the Load Center 2A Supply Breaker to trip. This is an associated circuits issue, which concerns availability of Load Center 2A. This Load Center provides power to Pressurizer Heater Group 2A, which can be relied upon to provide positive control of RCS Pressure if operational. Failure to ensure availability of this load center challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-BC-001	
VFDR	Q2B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 2B DISTRIBUTION PANEL - This safe shutdown component requires AC or DC power to perform it's safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. In order to avoid inadvertent RCS Pressure Transients Heater Group B is desired off. A loss of control power to the Heater Group from 125V DC Panel 2E would prevent remote tripping of the load. This failure challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

1

Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U2-2-009-BC-002		
VFDR	N2B31PT0445:AVAILABLE:AVAILABLE, SAFETY INJECTION PRESSURIZER TANK PRESSURE TRANSMITTER - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. The Pressurizer Power Relief Valve is required to cycle in order to de-pressurize the RCS System. A loss of the pressurizer control signal from PT445 could prevent re-closure of the valve once the auto-open feature has been actuated. PT445 suffers a loss of AC Power in this fire area, and cannot be relied upon to remain non-spurious. An inability to cycle the Pressurizer Power Relief Valve challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-009-BC-003		
VFDR	Q2E13PT0953:AVAILABLE:AVAILABLE, CONTAINMENT PRESSURE TRANSMITTER PROTECTION CHANNEL IV - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT953 could initiate a spurious Containment Hi-Hi signal. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, and a failure to establish a charging injection path. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This will not happen until the Battery Endurance time has been exhausted. This failure challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-009-BC-004		
VFDR	Q2E13PT0952:AVAILABLE:AVAILABLE, CONTAINMENT PRESSURE TRANSMITTER PROTECTION CHANNEL III - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT952 could initiate a spurious Containment Hi-Hi signal. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, and a failure to establish a charging injection path. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This will not happen until the Battery Endurance time has been exhausted. This failure challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.?		

Fire Safety Analysis Data Manager (4.1)

.

Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-BC-005	
VFDR	Q2E21P0002C:ON:ON/OFF, 2C CHARGING PUMP - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of power to charging pump 2C could result in an inability to trip the pump and a potential overcharging scenario. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-BC-006	
VFDR	Q2N11PT0475:AVAILABLE:AVAILABLE, STEAM GENERATOR 2A DISCHARGE PRESSURE - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT475 could initiate a spurious SIAS signal. This will not happen until the Battery Endurance time has been exhausted. A spurious SIAS could cause permanent RHR Pump Damage by spuriously starting the pump. The RHR system is required to provide decay heat removal in support of cold shutdown. These failures challenge the long term Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-BC-007	

Fire Safety Analysis Data Manager (4.1)



,



Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	/FDRs
VFDR	Q2N11PT0485:AVAILABLE:AVAILABLE, STEAM GENERATOR 2B DISCHARGE PRESSURE - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT485 could initiate a spurious SIAS signal. This will not happen until the Battery Endurance time has been exhausted. A spurious SIAS could cause permanent RHF Pump Damage by spuriously starting the pump. The RHR system is required to provide decay heat removal in support of cold shutdown. These failures challenge the long term Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements or Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-BC-008	
VFDR	Q2N23HV3227B:OPEN:THROTTLED, AFW SUPPLY TO STEAM GENERATOR 1B - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. Decay Heat Removal via SG2B is desired in this area, via MDAFW Pump 2B. In order to control feed water flow to SG2B, either the Flow control Valve HV3227B must be throttled, or MOVs V0025A and V0025B (MOV3764B and 3764D) must be throttled (Either one). A loss of DC power to panel 2D occurs once the endurance time of Battery 2B is exhausted and this prevents operator ability to unlatch relays MR4 or MR9, which would cause valve HV3227B to fail in the open position. These failures will prevent the ability to control feed water flow to SG 2B, thereby challenging the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-HVAC-001	
VFDR	Q2R42B0001B:ENERGIZED:ENERGIZED-BC2B, 125V DC BUS 2B - This component, 125V DC Bus 2B, requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component could challenge various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recove actions(s) are required to meet applicable risk criteria.	ery

7

Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U2-2-009-HVAC-002		
VFDR	Q2R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 2B - This component, Battery 2B, requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component could challenge various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U2-2-009-SEP-001		
VFDR	N2P11V0901:MODULATED:CLOSED, SJAE BYPASS FCV - The Condensate Storage Tank is required to supply feed water to the AFW Pumps in order to remove Decay Heat. Fire induced control Circuit damage to Valve N2P11V0901 could result in diversion of CST inventory to a non-credited path. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
	U2-2-009-SEP-002		
VFDR	N2P11V0902:MODULATED:CLOSED, GS CONDENSATE BYPASS FCV - The Condensate Storage Tank is required to supply feed water to the AFW Pumps in order to remove Decay Heat. Fire induced control Circuit damage to Valve N2P11V0902 could result in diversion of CST inventory to a non-credited path. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-009-SEP-003		
Fire Safety Analysis Data M	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1481 of 24		
Fire Safety Analysis Data M	Ianager (4.1) Farley Run: 08/18/2012 22:09 Page: 1481 of		



Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
VFDR	N2P19V0077:OPEN:OPEN, INSTRUMENT AIR TO PENETRATION ROOM ISOLATION - Valve HV3825 is required open in order to supply containment instrument air to various safe shutdown AOVs in containment (e.g. PORVs/Aux Spray). Fire induced control circuit damage could result in spurious closure of this valve, thereby eliminating the instrument air supply. Positive control of these AOVs is required to maintain appropriate RCS conditions. A failure to supply these valves with containment instrument air challenges the RCS Inventory/Pressure Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFP/ 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-SEP-004	
VFDR	Q2B31V0061:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF VALVE - The pressurizer PORV is required to isolate the Pressurizer from the RCS in order to prevent inadvertent de-pressurization. Fire induced control circuit damage could spuriously open the PORV, thereby leading to a de- pressurization condition. Failure to secure the pressurizer challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-SEP-005	
VFDR	Q2B41P0001B:ON:OFF, RCP 2B - The Reactor Coolant Pumps circulate RCS Coolant though the primary side, in order to transfer decay heat. In order to achieve a controlled natural circulation cool down, the Reactor Coolant Pumps are desired to be off. Fire induced circuit failure may spuriously start Reactor Coolant Pump 2B, and/or prevent tripping capability from the control room. Failure to trip Reactor Coolant Pump 2B challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-SEP-006	

;

Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	2E21V0245:CLOSED:CLOSED, RCS PRESSURIZER AUX SPRAY - Aux-Spray should be isolated in order to prevent inadvertent de-pressurization of the CS System. Valve V245 supplies the pressurizer with charging inventory for Aux-Spray. Fire induced control cable damage could spuriously open this valve, ereby spraying the pressurizer with charging inventory, and leading to uncontrolled RCS de-pressurization. A failure to isolate this charging supply challenges e RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of FPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-009-SEP-007		
VFDR	Q2E21V0258:CLOSED:OPEN, CHARGING PUMPS TO REGEN HX - A Charging Path is necessary in order to establish RCS Inventory Makeup. Valve V258 isolates the charging supply from the letdown heat exchanger. In order to establish a charging path this valve must remain open. Fire induced circuit failure could result in spurious closure of this valve. Failure to establish a charging path challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-009-SEP-008		
VFDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - The charging pumps are initially aligned to the VCT to receive suction. Fire induced control circuit damage could cause the outlet valve LCV0115E to close. The VCT outlet valve must remain open until swap over to the RWST is guaranteed. Furthermore, spurious SIAS is credible due to a loss of AC power, however it may not occur until the battery (2A and 2B) endurance time is exceeded. (Battery Chargers are not available) Failure to correctly swap over suction to the RWST challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-009-SEP-009		
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1483 of 2430		



Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2A - Feed water Flow via SG 2A needs to be isolated in this fire area, sinc it is not credited. Fire induced control circuit damage could result in valve HV3228A spuriously opening, thereby admitting feed water to SG2A via the TDAFW Pump. Furthermore, the TDAFW Pump could spuriously start due to its steam admission valves spuriously opening. Decay Heat Removal via SG 2B is desired in this area. An inability to isolate AFW flow to SG 2A will pose a challenge to the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-SEP-010	
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2C - Feed water Flow via SG 2C needs to be isolated in this fire area, since it is not credited. Fire induced control circuit damage could result in valve HV3228C spuriously opening, thereby admitting feed water to SG2C via the TDAFW Pump. Furthermore, the TDAFW Pump could spuriously start due to its steam admission valves spuriously opening. Decay Heat Removal via SG 2B is desired in this area. An inability to isolate AFW flow to SG 2C will pose a challenge to the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-SEP-011	
VFDR	Q2B13HV0003:CLOSED:CLOSED, REACTOR VESSEL HEAD VENT - The Reactor Vessel Head Vent Valves isolate the Reactor vessel from the pressurizer relief tank. Spurious opening of Q2B13HV0003 or Q2B13HV0004 due fire induced circuit failure could cause a loss of RCS inventory through the open reactor head vent path. This failure poses a challenge to the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	U2-2-009-SEP-012	

Fire Safety Analysis Data Manager (4.1)

.

Run: 08/18/2012 22:09 Page: 1484 of 2430

!

Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	N2B31PT0445:AVAILABLE:AVAILABLE, SAFETY INJECTION PRESSURIZER TANK PRESSURE TRANSMITTER - The Pressurizer Power Relief Valve required to cycle in order to de-pressurize the RCS System. A loss of the pressurizer control signal from PT445 could prevent re-closure of the valve once auto-open feature has been actuated. PT445 suffers fire induced cable damage in this fire area, and cannot be relied upon to remain non-spurious. An ina to cycle the Pressurizer Power Relief Valve challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a varia from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based appro of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-SEP-013	
VFDR	Q2B31V0027B:OPEN:OPEN/CLOSED, PORV BLOCK VALVE - The PORV or the PORV block valve must close/remain closed in order to isolate the pressurizer system. A loss of power to the Pressurizer PORV block valve would prevent closure of this normally open MOV. The valve control circuit remains free from fire damage. Failure to secure the Pressurizer challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-SEP-014	
VFDR	Q2E13P0001B:ON:OFF, 2B CONTAINMENT SPRAY PUMP - The RWST is the credited source of suction for Charging. Inadvertent drain down of the RWST due to spurious opening of the containment spray header valves/or spurious start of the CS Pump could lead to drain down. Fire induced control circuit damage to the Pump 2B and the CS Header valve 8820B could lead to drain down. Failure to secure CS Pump 2B or isolate the header path challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	U2-2-009-SEP-015	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1485 of 2430



:





Fire Area ID: Compliance Basis:	2-009-U2 - Aux Building Cable Chase, Rooms 2117 & 2246 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2N23HV3227B:OPEN:THROTTLED, AFW SUPPLY TO STEAM GENERATOR 2B - Decay Heat Removal via SG2B is desired in this area, via MDAFW Pum 2B. In order to control feed water flow to SG2B, either the Flow control Valve HV3227B must be throttled, or MOVs V0025A and V0025B (MOV3764B and 3764D) must be throttled (Either one). All three valves suffer fire induced control circuit damage in this area that would disable throttling capability. All of these valves however, will fail in the open position due to fire induced control circuit damage. These failures will prevent the ability to control feed water flow to SG 2E thereby challenging the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-SEP-016	
VFDR	N2P19V0080:OPEN:OPEN, INSTRUMENT AIR TO PENETRATION ROOM ISOLATION - Valve HV3885 is required open in order to supply containment instrument air to various safe shutdown AOVs in containment (e.g. PORVs/Aux Spray). Fire induced control circuit damage could result in spurious closure of this valve, thereby eliminating the instrument air supply. Furthermore, a loss of power to 125V DC Distribution Panel 2D and BOP Cabinet K will also cause this valve to fail in the closed position. Positive control of these AOVs is required to maintain appropriate RCS conditions. A failure to supply these valves with containment instrument air challenges the RCS Inventory/Pressure Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-009-SEP-017	
VFDR	Q2E11P0001B:OFF:ON/OFF, 2B RHR/LHSI PUMP - The RHR system is required to provide decay heat removal in support of cold shutdown. Therefore, it should remain available for use during these cold shutdown operations. Spurious Start of the RHR Pump along due to control circuit damage coupled with spurious closure of the RHR Pump 2B Miniflow valve also due to control circuit damage would prevent recirculation of RHR flow, thereby leading to a potential damage concern for the pump. The RHR Pump could also start upon a spurious load sequencing signal which is credible in this fire area. These failures challenge the long term Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Area ID: Compliance Basis:	2-012 - Hallway & Local Hot Shutdown Panel Room is: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
Fire Zone ID 2254	Description 2254 Hallway/Local Hot Shutdown Panel Room	



Compliance Basis: Un	012 - Hallway & Local Hot Shutdown Panel Room iit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation iit 1: NFPA 805, Section 4.2.3 Deterministic Approach	with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Sub Conditions	 Critical Unit 2: Subcritical conditions are maintained by isolating the VCT to p boron dilution and by charging borated water from the RWST using T charging pump or swing charging pump via Train A power. 	
	 Unit 1: Subcritical conditions are maintained by isolating the VCT to p boron dilution and by charging borated water from the RWST using T charging pump, Train B charging pump or swing charging pump via T A/Train B power. 	rain A
3.1 RCS Inventory Control - RCS Ma	 • Unit 2: RCS inventory is controlled using Train A charging pump, or s charging pump via Train A power aligned to the RWST. 	swing
	 Unit 1: RCS inventory is controlled using Train A charging pump, Tra charging pump or swing charging pump via Train A/Train B power all the RWST. 	
3.2 RCS Inventory Control - Isolate L Paths	 • Unit 2: Normal letdown is isolated using orifice isolation valves. Exceletdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A and Train B PORV. The RCS to RHR high/low pressure interface is is using the Train A/Train B RHR inboard isolation valve and Train A/Tr RHR outboard isolation valve. 	t VPORV solated
	 Unit 1: Normal letdown is isolated using orifice isolation valves, a leto isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A and Train B PORV. The RCS to RHR high/low pressure interface is is using the Train A/Train B RHR inboard isolation valve and Train A/Tr RHR outboard isolation valve. 	s t NPORV solated
3.3 RCS Inventory Control - RCP Sea	 Integrity Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained tripping all RCPs, maintaining normal seal injection using Train A cha pump or swing charging pump, and preventing failure of the RCP the barriers. RCP seal injection paths are secured by isolating the supply discharge seal injection lines. CCW to RCP thermal barriers are isola using containment isolation valves or the CCW to RCP thermal barrier isolation valve. 	arging rmal / and tted
	 Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained tripping all RCPs, maintaining normal seal injection using Train A cha 	
Fire Safety Analysis Data Manager (4	4 1) Earley	Run: 08/18/2012 22:09 Page: 1488 of 2430

Fire Safety Analysis Data Manager (4.1)

Compliance Basis: Unit 2: 1	Hallway & Local Hot Shutdown Panel Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
	pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Tran	 • Unit 2: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups. 	
	 Unit 1: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 	
4.2 RCS Pressure Control - Positive Press Control	• Unit 2: Positive control of RCS pressure is accomplished with performance- based appraoch Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A for pressure increase.	
	 Unit 1: Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase. 	
5 Decay Heat Removal	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 	
	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 	
6 Process Monitoring	• Unit 2: 1. Shutdown Margin - Performance-based approach shutdown margin is monitored. 2. RCS Pressure - Performance-based approach RCS pressure is monitored. 3. Pressurizer Level - Performance-based approach pressurizer level is monitored. 4. RCS Temperature - Performance-based approach RCS Loop 1/Loop 2/Loop 3 temperature is monitored. 5. SG Pressure - Performance-based approach Steam Generator 2A/2B/2C level - Performance-based approach Steam Generator 2A/2B/2C level is monitored.	
	• Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is	:
Fire Safety Analysis Data Manager (4.1)	Farley	Rup: 08/18/2012 22:00 Page: 1489 of 2430



Run: 08/18/2012 22:09 Page: 1489 of 2430

Fire Area ID: Compliance Basis:	2-012 - Hallway & Local Hot Shutdown Panel Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluatior Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	FPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Performance Goal	Method of Accomplishment	Comments		
	monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RC 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored.			
7.1 Vital Auxiliaries Electrical	 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/S diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC pow 120 VAC power is supplied by Train A/Train B equipment. 			
	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/S diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC pow 120 VAC power is supplied by Train A/Train B equipment. 			
7.2 Vital Auxiliaries Service Wate	Train A/Train B service water is provided with two service water pumps service recirculating to the pond or Train A/Train B service water is pro with one service water pump in service recirculating to the pond and ne essential turbine building loads isolated.	ovided		
7.3 Vital Auxiliaries Component C	 Unit 2: Train A component cooling water is provided with non-essenti isolated. 	al loads		
	 Unit 1: Train A/Train B component cooling water is provided with non essential loads isolated. 			
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train B HVAC. Room cooling at e locations is provided with HVAC equipment corresponding to the servio train.			

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-012 - Hallway & Local Hot Shutdown Panel Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	ENGDOC, DOEJ-SM-03-0415-001 Applicability of NFPA 80 Door Closer Requirements
Inactive	Νο
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This evaluation addresses a select number of fire doors that occasionally may not automatically latch closed due to "abnormal air pressure".
	Bases for Acceptability:
	The specific fire doors cited are PA101, 201 and 497. The evaluation justifies the door latching deviation by taking credit for plant staff that ensure all fire doors are closed after entry or egress.
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described, Elements with construction features equal to 3-hr boundaries were credited as such, The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.









Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-104	EEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-104	Risk Criteria	Required to meet risk criteria.
Detection	2A-104	DID Criteria	Required to meet DID criteria.
Passive	Plant staff Training	EEEE/LA	Plant Staff Training is required to address a door closure.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Modifications		Risk Criteria	Modification to install incipient detection and to replace trip device in panel Q2R42B0001B, breaker LB14.

1

Fire Area ID: Compliance Basis:	2-012 - Hallway & Local Hot Shutdown Panel Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
Title	FRE for Fire Area 2-012	
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection system and modification(s), the applicable risk, defense-in-depth, and safety margin criteria were satisfied.	
Δ CDF	2.71E-08	
ΔLERF	4.78 E- 11	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.	
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.	
Comments		



Fire Area ID: Compliance Basis:	2-012 - Hallway & Local Hot Shutdown Panel Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID	U2-2-012-IA-001	
VFDR	Q2E21V0243:CLOSED:CLOSED, RCS ALTERNATE CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the alternate charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Alternate Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-012-IA-002	
VFDR	Q2E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the normal charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Normal Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the aux spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-012-IA-003	
VFDR	Q2E21V0245:CLOSED:OPEN/CLOSED, RCS PRESSURIZER AUX SPRAY - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. This valve is required to cycle in order to supply CVCS inventory to the pressurizer to de-pressurize via aux-spray, and the valve fails closed on a loss of instrument air. An inability to cycle this valve due to a loss of instrument air would prevent de-pressurization of the RCS via aux-spray. Failure to ensure cycling capability of this valve challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

.

Fire Area ID: Compliance Basis:	2-012 - Hallway & Local Hot Shutdown Panel Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-012-IA-004
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A loss of instrument air could result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-012-IA-005
VFDR	Q2N11PV3371C:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. In order to achieve atmospheric relief on the secondary side, modulation of MSARV valve to SG2C is required. A loss of instrument air will result in the valve failing closed. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	. U2-2-012-SEP-001
VFDR	Q2B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 2B DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater 2B, or prevent remote tripping of the load. Failure to secure the Pressurizer Heater 2B could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.









Fire Area ID: Compliance Basis:	2-012 - Hallway & Local Hot Shutdown Panel Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	!	
VFDR ID	U2-2-012-SEP-002	
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - Charging via the CVCS system is required to maintain RCS Inventory, however only one charging pump is credited for operation. Fire induced control circuit damage to Train B Charging (Pump 2B-aligned Train B) could result in spurious starting of the pump. This could lead to an overcharging condition by adding an excessive amount of Charging Inventory to the RCS. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-012-SEP-003	
VFDR	Q2E21P0002C:ON:ON/OFF, 2C CHARGING PUMP - Charging via the CVCS system is required to maintain RCS Inventory, however only one charging pump is credited for operation. Fire induced control circuit damage to Train B Charging (Pump 2C) could result in spurious starting of the pump. This could lead to an overcharging condition by adding an excessive amount of Charging Inventory to the RCS. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	:	
VFDR ID	U2-2-012-SEP-004	
VFDR	Q2N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - The TDAFW Pump Steam Admission valves must remain closed in order to avoid spurious steam admission into the pump, and lead to a spurious pump start. Fire induced control circuit damage to HV3235A could result in the valve spuriously opening and admitting steam to the non-credited TDAFW Pump. Failure to secure these valves challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

Fire Area ID: Compliance Basis:	2-012 - Hallway & Local Hot Shutdown Panel Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-012-SEP-005	
VFDR	Q2N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - The TDAFW Pump Steam Admission valves must remain closed in order to avoid spurious steam admission into the pump, and lead to a spurious pump start. Fire induced control circuit damage to HV3235B could result in the valve spuriously opening and admitting steam to the non-credited TDAFW Pump. Failure to secure these valves challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-012-SEP-008	
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. This valve is required to throttle in order to control the amount of charging inventory that enters the RCS System. Fire induced control circuit failure could result in this valve failing fully open, or spuriously closing. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-012-SEP-011	
VFDR	N2C55NI0031A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31A - Source Range Instrumentation is required to monitor Reactivity Conditions. A loss of channel 1 and channel 2 Source Range Detectors could occur, due to fire induced circuit failures. This would prevent operator ability to monitor source range count levels. Failure to monitor subcritical conditions challenges the Reactivity Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

•



Fire Area ID: Compliance Basis:	2-012 - Hallway & Local Hot Shutdown Panel Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	VFDRs
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-012-SEP-013	
VFDR	Q2N11PV3371C:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - In order to achieve atmospheric relief on the secondary side, modulation of MSARV valve to SG2C is necessary. Since cool down via SG2C is desired in this area, fire induced circuit failure to the control circuitry of this valve could cause the valve to fail in the closed position. Failure to secure this valve challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	ŧV
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

 \mathbf{X}

Fire Area ID: Compliance Basis:	2-013-U1 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
2227-U1	2227 Vertical Cable Chase, El. 128'-0"	
2300-U1	2300 Vertical Cable Chase, El. 141'-0"	
2466-U1	2466 Vertical Cable Chase, El. 155'-0"	
2500-U1	2500 Vertical Cable Chase, El. 168'-6"	

Fire Safety Analysis Data Manager (4.1)

Farley

Run: 08/18/2012 22:09 Page: 1499 of 2430







	2-013-U1 - Aux Building Cab NFPA 805, Section 4.2.3 Det	le Chase, Rooms 2227, 2300, 2466, & 2500 erministic Approach		Performance Goals
Performance Goal	Method of A	Accomplishment	Comments	
1 Primary Control Station	Plant shutdo	wn is performed from the Control Room.		
2.1 Reactivity Control - Reactor Tri	p Reactor is m	anually tripped from the Control Room.		
2.2 Reactivity Control - Maintain St Conditions	dilution and I	onditions are maintained by isolating the VCT to prevent boron by charging borated water from the RWST using Train A charging B charging pump or swing charging pump via Train A/Train B	:	
3.1 RCS Inventory Control - RCS M		ry is controlled using Train A charging pump, Train B charging ng charging pump via Train A/Train B power aligned to the RWST		
3.2 RCS Inventory Control - Isolate Paths	valve, or a le isolated usin PZR PORV I PORV. The I	wwn is isolated using orifice isolation valves, a letdown isolation atdown path containment isolation valve. Excess letdown is ig one or more excess letdown or containment isolation valves. leakage paths are isolated using Train A PORV and Train B RCS to RHR high/low pressure interface is isolated using the in B RHR inboard isolation valve and Train A/Train B RHR lation valve.		
3.3 RCS Inventory Control - RCP S	RCPs, maint charging pur preventing fa secured by is RCP therma	P Seal Integrity - RCP seal integrity is maintained by tripping all taining normal seal injection using Train A charging pump, Train B np or swing charging pump via Train A/Train B power, and allure of the RCP thermal barriers. RCP seal injection paths are solating the supply and discharge seal injection lines. CCW to I barriers are isolated using containment isolation valves or the P thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressu	ensuring au RCPs are sh	epressurization due to inadvertent spray is prevented by xiliary spray valve remains closed and the Loop 1 and Loop 2 ut off. Undesired pressure increase is prevented by deenergizing er heater groups.	1	
4.2 RCS Pressure Control - Positiv Control		trol of RCS pressure is accomplished with Train A PORV, Train B x spray for pressure reduction and Pressurizer Heater Group A/B increase.		
				; ;
Fire Safety Analysis Data Manager	(4.1)	Farley	Run: 08/18/2012 22:0	9 Page: 1500 of 2430

	2-013-U1 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Steam Gene 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.		
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by P narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide ra pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Lo 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C level is monitored.	ange oop	
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, die generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied b Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.	У	
7.2 Vital Auxiliaries – Serviće Wate	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provide with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.	ded	
7.3 Vital Auxiliaries – Component (Water	Cooling Train A/Train B component cooling water is provided with non-essential le isolated.	oads	
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room coolin essential locations is provided with HVAC equipment corresponding to th service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system location of equipment being above water collection area in chase. There are no drains in the electrical chase, but all water would collect below the cable trays. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Run: 08/18/2012 22:09 Page: 1501 of 2430







Fire Area ID: Compliance Basis:	2-013-U1 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 NFPA 805, Section 4.2.3 Deterministic Approach	· .	Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers	;	
Inactive	No .		
Functionally Equivalent	No		
Adequate for the Hazard	Yes	I	
Summary	Purpose:		
	This report includes engineering equivalency evaluations for several fire area boundari such as SWIS, RWIS and the Diesel Generator Building. The approach was to examir rated barrier. Evaluations were also included non-rated reach rod penetrations and se	he any boundary for which there was	not a documented/credited 3-hr
	Bases for Acceptability:		
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,		

- The construction of the boundary and the potential issue with the element in question was described,
- The fire hazards and fire protection features on both sides of the barrier were described,
- Elements with construction features equal to 3-hr boundaries were credited as such,
- The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

.

Fire Area ID: 2-(Compliance Basis: NF	013-U1 - Aux Building Cable Chase, FPA 805, Section 4.2.3 Deterministic	Rooms 2227, 2300, 2466, & 2500 Approach	Required Fire Prote	ction Systems and Features
Required FP System(s)/Feature(s) Detection Water Suppression Passive	Description 2A-23 2A-23 One Hour Rated Cable	Required By Separation Separation Separation	Comments Required to support the use of MI cable. Required to support the use of MI cable. Required to support the use of MI cable.	
				ŗ
			· · ·	
Fire Safety Analysis Data Manager (4	4 1)	Farley	Run: 08/18/2012	22:09 Page: 1503 of 2430



Fire Area ID: Compliance Basis:	2-013-U1 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title		
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
Δ CDF		
Δ LERF		
DID Maintained		
Safety Margin Maintained		
Comments		

Fire Area ID:2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500Compliance Basis:NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		Fire Area Definition
Fire Zone ID	Description	
2227-U2	2227 Vertical Cable Chase, El. 128'-0"	
2300-U2	2300 Vertical Cable Chase, El. 141'-0"	
2466-U2	2466 Vertical Cable Chase, El. 155'-0"	
2500-U2	2500 Vertical Cable Chase, El. 168'-6"	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1505 of 2430





	- Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 5, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	g deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump aligned to Train A power.	-	
		1	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakag Paths	Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integ	rity Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance -based approach tripping all RCPs. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressure Trans	ient Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are performance-based approach shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressu Control	re Positive control of RCS pressure is accomplished with performance-based approach Train A PORV for pressure reduction and performance-based approach Pressurizer Heater Group A for pressure increase.		

Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A supplying Steam Generator 2A/2B. Main feed is performance-ba isolated to prevent uncontrolled cooldown.		
6 Process Monitoring	 Shutdown Margin - Performance-based approach shutdown r monitored. RCS Pressure - Performance-based approach Romonitored. Pressurizer Level - Performance-based approach level is monitored. RCS Temperature - Performance-based a Loop 1/Loop 2 temperature is monitored. SG Pressure - Perf based approach Steam Generator 2A/2B pressure is monitored. Performance-based approach Steam Generator 2A/2B level is 	S pressure is pressurizer oproach RCS ormance- 6. SG Level	
7.1 Vital Auxiliaries – Electrical	 Electrical power is supplied by diesel generator EDG1-2A.2.4. V power is supplied by Train A distribution equipment.3.125 VD0 120 VAC power is supplied by Train A equipment. 		
7.2 Vital Auxiliaries – Service W	ater Train Aservice water is provided with two service water pumps in recirculating to the pond or Train A service water is provided with water pump in service recirculating to the pond and non-essentia building loads isolated.	one service	
7.3 Vital Auxiliaries – Componen Water	nt Cooling Train A component cooling water is provided with non-essential	bads isolated.	
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train AHVAC. Room coolin locations is provided with HVAC equipment corresponding to the train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system location of equipment being above water collection area in chase. There are no drains in the electrical chase, but all water would collect below the cable trays. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.





Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	Νο
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	. The first function of first sector for the sector is both sides of the first sector description of the d

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

÷

	-013-U2 - Aux Building Cable Chase, Roon IFPA 805, Section 4.2.4.2 Performance-Ba		00 Required Fire Protection Systems and Features Evaluation with simplifying deterministic assumptions
Required FP System(s)/Feature(s)) Description	Required By	Comments
Detection	2A-23 [1]	Risk Criteria	Required to meet risk critéria.
Detection	2A-23 [1]	DID Criteria	Required to meet DID criteria.
Detection	2A-23 [2300]	Risk Criteria	Required to meet risk criteria.
Detection	2A-23 [2300]	Separation	Required to support the use of MI cable.
Detection	2A-43	Risk Criteria	Required to meet risk criteria.
Detection	2A-43	Separation	Required to support the use of MI cable.
Water Suppression	2A-23	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-23	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-23 [2300]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-23 [2300]	Separation	Required to support the use of MI cable.
Passive	One Hour Rated Cable	Risk Criteria	Required to meet risk criteria.
Passive	One Hour Rated Cable	Separation	Required to support the use of MI cable.
Passive	Restricted transient controls	DID Criteria	Required to meet DID criteria.
Modifications		Risk Criteria	Modification to provide fuse or other electrical isolation device at the DC shunt connection point and replace trip device in panel Q2R42B0001B, breaker LB14.



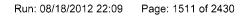


Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Årea 2-013-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with fire rated cable, modification(s), enhanced transient restrictions and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	7.97E-08
Δ LERF	1.38E-08
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, enhanced transient restrictions and the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

.

Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-013-IA-001
VFDR	Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. The valve is normally closed, required to cycle to control RCS pressure. Fire induced damage due to instrument air components prevent the ability to control RCS pressure, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-001
VFDR	N2B21TR0410:AVAILABLE-TE410:AVAILABLE-TE410, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-005
VFDR	N2B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL -The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-006

Fire Safety Analysis Data Manager (4.1)



Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	N2B31LI0459A:AVAILABLE:AVAILABLE, PRESSURIZER LEVEL INDICATOR - The indicator is normally available, required available at least one indicator from pressurizer level is required to provide process monitoring of RCS level. Fire induced cable result in failure to monitor the RCS level, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR IÐ	U2-2-013-SEP-008
VFDR	N2B31PI0455:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE INDICATOR PI-455 (PROTECTION CHANNEL I) - The indicator is normally available, required available for pressurizer pressure monitoring. Fire induced cable damage prevents the ability to monitor the pressure, and a challenge to the performance monitoring of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-009
VFDR	N2B31PI0456:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE INDICATOR PI-456 (PROTECTION CHANNEL II) - The indicator is normally available, required available for pressurizer pressure monitoring. Fire induced cable damage prevents the ability to monitor the pressure, and a challenge to the performance monitoring of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-013-SEP-014

Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 VFDI NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	N2C55NI0031A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31A - N2C55NI0031A - Source Range Count Rate Indicator NI- 31A and N2C55NI0032A - Source Range Count Rate Indicator NI-32A. The indicator is normally available, required available to monitor shutdown margin. Fire induced cable damage prevents the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			
VFDR ID	U2-2-013-SEP-015			
VFDR	N2C55NI0032A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32A - N2C55NI0031A - Source Range Count Rate Indicator NI- 31A and N2C55NI0032A - Source Range Count Rate Indicator NI-32A. The indicator is normally available, required available to monitor shutdown margin. Fire induced cable damage prevents the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			
VFDR ID	U2-2-013-SEP-016			
VFDR	N2N11LR0477:AVAILABLE-LT477:AVAILABLE-LT477, 2A, 2B, 2C STEAM GENERATOR WIDE RANGE LEVEL RECORDER - The recorder is normally available, required available at least one indicator from credited steam generator is required to provide process monitoring of steam generator level. Fire induced cable result in failure to monitor the steam generator level, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-013-SEP-018			







Fire Area ID: Compliance Basis:	5 · · · · · · · · · · · · · · · · · · ·			
VFDR				
Disposition				
VFDR ID	U2-2-013-SEP-019			
VFDR	N2N11PI0484:AVAILABLE:AVAILABLE, STEAM GENERATOR 2B DISCHARGE PRESSURE - The indicator is normally available, required available at least one indicator steam generator pressure is required to provide process monitoring of steam generator pressure. Fire induced cable damage results in failure to monitor the steam generator pressure, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Pérformance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-013-SEP-022			
VFDR	Q2N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage can spuriously open valve and prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
<u>.</u>	U2-2-013-SEP-023			

Fire Safety Analysis Data Manager (4.1)

.

Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 VFDF NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required closed to control steam generator pressure. Fi induced cable damage can spuriously open valve and prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-024		
VFDR	Q2N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage can spuriously open valve and prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-025		
VFDR	Q2N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage can spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-026		
VFDR	Q2N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage can spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		

1

Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
	U2-2-013-SEP-027			
VFDR	Q2N23P0001A:OFF:ON/OFF, 2A MDAFW PUMP - The pump is normally off, required on to provide AFW to a steam generator. Fire induced cable damage can prevent the ability of pump to deliver flow to steam generator, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-013-SEP-031			
VFØR	Q2B41P0001A:ON:OFF, RCP 2A - The pump is normally on, required off to prevent RCS inventory losses. Fire induced cable damage to power supply may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-013-SEP-032			
VFØR	Q2B41P0001B:ON:OFF, RCP 2B - The pump is normally on, required off to prevent RCS inventory losses. Fire induced cable damage and control power supply failure may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			

Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U2-2-013-SEP-033		
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - The heater is normally available, required available to control pressure. Fire induced damage to power supplies result in failure of heater operation, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-034		
VFDR	Q2B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 2B DISTRIBUTION PANEL - The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage and control power supply failure can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
 VFDR ID	U2-2-013-SEP-035		
VFDR	N2B31L0001C:ON:OFF, PRESSURIZER HEATER GROUP 2C DISTRIBUTION PANEL - The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced damage to power supplies can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-036		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1517 of 2430





Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, NFPA 805, Section 4.2.4.2 Performance	Rooms 2227, 2300, 2466, & 2500 ce-Based Approach - Fire Risk Evaluation with simplifying	g deterministic assumptions	VFDR
VFDR	pressure transients. Fire induced dama Nuclear Safety Performance Criteria. T	PRESSURIZER HEATER GROUP 2D DISTRIBUTION PANEL - The Heater is normally in standby, required off to prevent RCS induced damage to power supplies can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control nce Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a te for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition		dition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that e risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-037		:	
VFDR	Operated Relief; N2B31PT0445 - Safe pressure. Fire induced damage due to Inventory and Pressure Control Nuclea	T0445:AVAILABLE:AVAILABLE, SAFETY INJECTION PRESSURIZER TANK PRESSURE TRANSMITTER - Q2B31V0053 - Pressurizer Power d Relief; N2B31PT0445 - Safety Injection Pressurizer Tank Pressure Transmitter. The valve is normally closed, required to cycle to control RCS Fire induced damage due to instrument air components and transmitter signal prevent the ability to control RCS pressure, and a challenge to the RCS y and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			nined that
VFDR ID	U2-2-013-SEP-042			
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - Q2E21P0002B - 2B Charging Pump; Q2E21P0002C - 2C Charging Pump; Q2R41L0001E - 125Vdc Distribution Panel 2E; Q2R43E0001B - Sequencer Bus 2G. The pump is normally in Standby, required off; sequencer normally available, required available, and panel normally energized, required energized. Fire induced cable damage and cascading power supply failures can prevent tripping the pumps, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		ble, required oping the pumps, ne deterministic	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		nined that	
VFDR ID .	U2-2-013-SEP-043			
Fire Safety Analysis Data M	anager (4.1)	Farley	Run: 08/18/2012 22:09	Page: 1518 of 2430

3

Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDR	
VFDR	Q2E21P0002C:ON:ON/OFF, 2C CHARGING PUMP - Q2E21P0002B - 2B Charging Pump; Q2E21P0002C - 2C Charging Pump; Q2R41L0001E - 125V Distribution Panel 2E; Q2R43E0001B - Sequencer Bus 2G. The pump is normally in Standby, required off; sequencer normally available, required availa and panel normally energized, required energized. Fire induced cable damage and cascading power supply failures can prevent tripping the pumps, and challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, 5 4.2.4.	able, d a	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-044		
VFDR	Q2R41L0001E:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 2E - Q2E21P0002B - 2B Charging Pump; Q2E21P0002C - 2C Charging I Q2R41L0001E - 125Vdc Distribution Panel 2E; Q2R43E0001B - Sequencer Bus 2G. The pump is normally in Standby, required off; sequencer normally available, required available, and panel normally energized, required energized. Fire induced cable damage and cascading power supply failures can pr tripping the pumps, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a varian the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approac NFPA 805, Section 4.2.4.	y revent nce from	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-045		
VFDR	Q2R43E0001B:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2G - Q2E21P0002B - 2B Charging Pump; Q2E21P0002C - 2C Charging Pump; Q2R41L0001E - 125Vdc Distribution Panel 2E; Q2R43E0001B - Sequencer Bus 2G. The pump is normally in Standby, required off; sequencer normally available, required available, and panel normally energized, required energized. Fire induced cable damage and cascading power supply failures can prevent tripping the pumps, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-046		
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 15	19 of 2430	



Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 is: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - The valve is normally closed, required closed to prevent charging pump run out. Fire induced damage generates SIAS signal to cause failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-013-SEP-047			
VFDR	Q2E21V0258:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - The valve is normally open, required to open to maintain RCS inventory. Fire induced cable damage may generate a SIAS to preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-013-SEP-048			
VFDR	Q2E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - The valve is normally open, required to open to maintain RCS inventory. Fire induced cable damage may generate a SIAS to preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-013-SEP-049			
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - The valve is normally modulated, required modulated to provide makeup. Fire induced cable damage and instrument air components failure can prevent makeup, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			

Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-050		
VFDR	Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valves are normally open, required open to supply VCT to charging pump. Fire induced damage to power supplies generate SIAS or low VCT level to spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-051		
VFDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valves are normally open, required open to supply VCT to charging pump. Fire induced damage to power supplies generate SIAS or low VCT level to spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-013-SEP-052		
VFDR	Q2N21V0001A:OPEN:CLOSED, A STEAM GENERATOR MAIN FEED STOP CHECK VALVE MOV3232A - N2N21P0001A - Condensate Pump 2A; N2N21P0001B - Condensate Pump 2B; N2N21P0001C - Condensate Pump 2C; Q2N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q2N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q2N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1521 of 2430

Y

2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
U2-2-013-SEP-053			
Q2N21V0001B:OPEN:CLOSED, B STEAM GENERATOR MAIN FEED STOP CHECK VALVE MOV3232B - N2N21P0001A - Condensate Pump 2A; N2N21P0001B - Condensate Pump 2B; N2N21P0001C - Condensate Pump 2C; Q2N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q2N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q2N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represe variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-b approach of NFPA 805, Section 4.2.4.			
This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
U2-2-013-SEP-054			
Q2N21V0001C:OPEN:CLOSED, C STEAM GENERATOR MAIN FEED STOP CHECK VALVE MOV3232C - N2N21P0001A - Condensate Pump 2A; N2N21P0001B - Condensate Pump 2B; N2N21P0001C - Condensate Pump 2C; Q2N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q2N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q2N21V0001C - C Steam Generator Main Feed Stop Check V MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-bas approach of NFPA 805, Section 4.2.4.			
This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
U2-2-013-SEP-055			

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:		ole Chase, Rooms 2227, 2300, 2466, & 2500 VFDR Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	N2N21P0001C - Condensate Pump 2C; Q2 Main Feed Stop Check Valve MOV3232B, C off, the valve is normally open, required clos challenge to the Decay Heat Removal Nucle	OFF, CONDENSATE PUMP 2A - N2N21P0001A - Condensate Pump 2A; N2N21P0001B - Condensate Pump 2B; ump 2C; Q2N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q2N21V0001B - B Steam Generator IOV3232B, Q2N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a moval Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section paration Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition		e using the performance-based approach of NFPA 80 y margin criteria were satisfied without further action.	15, Section 4.2.4. A fire risk evaluation deter	mined that
VFDR ID	U2-2-013-SEP-056			
VFDR	N2N21P0001C - Condensate Pump 2C; Q2 Main Feed Stop Check Valve MOV3232B, Q off, the valve is normally open, required clos challenge to the Decay Heat Removal Nucle	COFF, CONDENSATE PUMP 2B - N2N21P0001A - Condensate Pump 2A; N2N21P0001B - Condensate Pump 2B; Pump 2C; Q2N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q2N21V0001B - B Steam Generator MOV3232B, Q2N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a temoval Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section eparation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition		for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that epth, and safety margin criteria were satisfied without further action.		mined that
VFDR ID	U2-2-013-SEP-057			
VFDR	N2N21P0001C:ON/STANDBY:OFF, CONDENSATE PUMP 2C - N2N21P0001A - Condensate Pump 2A; N2N21P0001B - Condensate Pump 2B; N2N21P0001C - Condensate Pump 2C; Q2N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q2N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q2N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		Steam Generator hormally on required lve open, and a irements of Section	
Disposition		s condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that licable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		mined that
VFDR ID	U2-2-013-SEP-058		Mag - 1 - 1994 - 1 - 1 - 1 - 1 - 1 - 1 - 1	
Fire Safety Analysis Data I	Manager (4.1)	Farley	Run: 08/18/2012 22:09	Page: 1523 of 2430



Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 VFDI NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2E11P0001A:OFF:ON/OFF, 2A RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001B - Sequenc Bus 2G. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced cable damage, spurious SIAS signal and / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-013-SEP-059			
VFDR	Q2E11P0001B:OFF:ON/OFF, 2B RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001B - Sequencer Bus 2G. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced cable damage, spurious SIAS signal and / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-013-SEP-060			
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required to cycle to control steam generator pressure. Fire induced cable damage and instrument air components failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
	U2-2-013-SEP-061			

Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 VFI NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required to cycle to control steam generator pressure. Fire induced cable damage and instrument air components failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-062
VFDR	Q2N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2A - Q2N23P0002 - TDAFW Pump; Q2N23HV3228A - TDAFW Supply to Steam Generator 2A. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-063
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228A - TDAFW Supply to Steam Generator 2A. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill: Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-064
Fire Safety Analysis Data Mar	inager (4.1) Farley Run: 08/18/2012 22:09 Page: 1525 of 24



Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 VFD NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2B - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply to Steam Generator 2B. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-065
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply to Steam Generator 1B. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-066
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2C - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 2C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-067

Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 2227, 2300, 2466, & 2500 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 1C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and instrument air components failures may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-068
VFDR	Q2B41P0001A:ON:OFF, RCP 2A - The pump is normally on, required off to prevent RCS inventory losses. Fire induced cable damage to power supply may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-069
VFDR	Q2B41P0001B:ON:OFF, RCP 2B - The pump is normally on, required off to prevent RCS inventory losses. Fire induced cable damage and control power supply failure may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-013-SEP-070



Fire Area ID: Compliance Basis:	2-013-U2 - Aux Building Cable Chase, Rooms 222 NFPA 805, Section 4.2.4.2 Performance-Based Ap	7, 2300, 2466, & 2500 proach - Fire Risk Evaluation with sim	plifying deterministic assumptions	VFDRs
VFDR	Q2B41P0001C:ON:OFF, RCP 2C - The pump is no prevent pump trip, and a challenge to the RCS Inve the deterministic requirements of Section 4.2.3 of N NFPA 805, Section 4.2.4.	entory and Pressure Control Nuclear S	Safety Performance Criteria. This condition repre	esents a variance from
Disposition	This condition was evaluated for compliance using applicable risk, defense-in-depth, and safety margi	the performance-based approach of t n criteria were satisfied without further	NFPA 805, Section 4.2.4. A fire risk evaluation d	etermined that
			a 1	
	:			
Fire Safety Analysis Data N		Farley	Run: 08/18/2012 22:	09 Page: 1528 of 2430

Fire Area ID: Compliance Basis:	2-014 - Computer Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID 2201	Description	





.



Compliance Basis: Unit 2	4 - Computer Room 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with s 1: NFPA 805, Section 4.2.3 Deterministic Approach	simplifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcri Conditions	tical Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A chargin pump, Train B charging pump or swing charging pump via Train A/Train B power.	g	
3.1 RCS Inventory Control - RCS Make	RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Lea Paths	Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal	Integrity Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train charging pump, or swing charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	1	
4.1 RCS Pressure Control - Pressure T	ransient Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizir all pressurizer heater groups.	g	
4.2 RCS Pressure Control - Positive Pr Control	 • Unit 2: Positive control of RCS pressure is accomplished with performance based approach Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase. 		
	 Unit 1: Positive control of RCS pressure is accomplished with Train A POR Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase. 	V,	

	outer Room 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 805, Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	• Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown.	
	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 	
6 Process Monitoring	 Unit 2: 1. Shutdown Margin - Performance-based approach shutdown margin is monitored. 2. RCS Pressure - Performance-based approach RCS pressure is monitored. 3. Pressurizer Level - Performance-based approach pressurizer level is monitored. 4. RCS Temperature - Performance-based approach RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Performed-based approach Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Performance- based approach Steam Generator 2A/2B/2C level is monitored. 	
:	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored. 	÷
7.1 Vital Auxiliaries Electrical	• Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.	
	• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.	
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non- essential turbine building loads isolated.	
7.3 Vital Auxiliaries Component Cooling Water	Train A/Train B component cooling water is provided with non-essential loads isolated.	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1531 of 2430



.



Fire Area ID: Compliance Basis:	2-014 - Computer Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

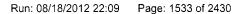
Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent'areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-014 - Computer Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.





Fire Area ID:2-014 - Computer RoomCompliance Basis:Unit 2: NFPA 805, Section 4.Unit 1: NFPA 805, Section 4.		Required Fire Protection Systems and Featur 2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions .2.3 Deterministic Approach		
Required FP System(s)/Feature(s) Detection	Description 2A-33	Required By DID Criteria	Comments Required to meet DID criteria.	
		·		
Fire Safety Analysis Data Manager	(4.1)	Farley		Run: 08/18/2012 22:09 Page: 1534 of 24

Fire Area ID: Compliance Basis:	2-014 - Computer Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		
Title	FRE for Fire Area 2-014		
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.		
Δ CDF	4.05E-11		
ΔLERF	9.76E-15		
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.		
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.		
Comments			







•





Fire Area ID: Compliance Basis:	2-014 - Computer Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-014-IA-001
VFDR	Q2E21V0243:CLOSED:CLOSED, RCS ALTERNATE CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the alternate charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Alternate Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-014-IA-002
VFDR	Q2E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the normal charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Normal Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the aux spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-014-IA-003
VFDR	Q2E21V0245:CLOSED:OPEN/CLOSED, RCS PRESSURIZER AUX SPRAY - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. This valve is required to cycle in order to supply CVCS inventory to the pressurizer to de-pressurize via aux-spray, and the valve fails closed on a loss of instrument air. An inability to cycle this valve due to a loss of instrument air would prevent de-pressurization of the RCS via aux-spray. Failure to ensure cycling capability of this valve challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
,	

Fire Area ID: Compliance Basis:	2-014 - Computer Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-014-IA-004
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A loss of instrument air could result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-014-IA-005
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. The Atmospheric Relief Valves are required to modulate in order to relieve steam to the atmosphere and facilitate the removal of decay heat. Decay Heat Removal via SG2A is desired in this fire area. A loss of instrument air will cause valve ARV PV3371A to fail closed. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-014-SEP-001

Run: 08/18/2012 22:09 Page: 1537 of 2430



Fire Area ID: Compliance Basis:	2-014 - Computer Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	N2B21TR0410:AVAILABLE-TE410:AVAILABLE-TE410, RCS COLD LEG TEMPERATURE RECORDER TR-410 - RCS Temperature Indication at the control room (or local control center) is required in order to remove decay heat through the steam generators. Fire induced circuit damage to Temperature Element TE410 will prevent indication from being available at the control for RCS Loop 1(Hot Leg). Furthermore, a loss of power to AC Panel 2B will prevent indication via TE410 from being available, due to power feed circuit damage. This failure challenges the Decay Heat Removal Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	. U2-2-014-SEP-003
VFDR	Q2C22LT0475:AVAILABLE:AVAILABLE, STEAM GENERATOR 2A LEVEL TRANSMITTER - Decay Heat Removal via SG 2A is desired in this fire area. In order to remove Core Decay Heat, Steam Generator Level Indication must remain available for operators at the control room. Fire induced circuit failure to LI0474, LI0475, LI0477, and LI0478 could render SG 2A Level Indication unavailable. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. (All four indicators must suffer failure). This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-014-SEP-004
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. This valve is required to be throttled in order to control the charging inventory flow into the RCS System. Fire induced circuit failure could result in the valve spuriously opening, or closing. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance ¹ based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-014-SEP-007
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1538 of 2430

Fire Area ID: Compliance Basis:	2-014 - Computer Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	N2C55NI0031A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31A - Source Range Instrumentation is required to monitor Reactivity Conditions. A loss of channel 1 and channel 2 Source Range Detectors could occur, due to fire induced circuit failures. This would prevent operator ability to monitor source range count levels. Failure to monitor subcritical conditions challenges the Reactivity Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).

~

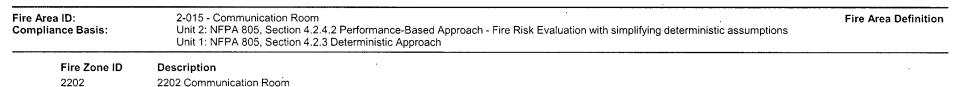
.











Compliance Basis: Unit 2: NFPA	nunication Room 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sin 805, Section 4.2.3 Deterministic Approach	nplifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	 Unit 2: Subcritical conditions are maintained by performance-based approach isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump via Train B power. 		
	 Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power. 		
3.1 RCS Inventory Control - RCS Makeup	 Unit 2: RCS inventory is controlled using Train B charging pump, or swing charging pump via Train B power aligned to the RWST. 		
	 Unit 1: RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST. 	i	
3.2 RCS Inventory Control - Isolate Leakage Paths	• Unit 2: Normal letdown is performance-based approach isolated. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	÷	
	 Unit 1: Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve. 		
3.3 RCS Inventory Control - RCP Seal Integrity	• Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train B charging pump, or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier barrier.		
	• Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by		
Fire Safety Analysis Data Manager (4.1)	Farley	Run: 08/18/2012 22:09	Page: 1541 of 2430







Compliance Basis: Ur	015 - Communication Room nit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Ris nit 1: NFPA 805, Section 4.2.3 Deterministic Approach		mance Goals
Performance Goal	Method of Accomplishment	Comments	
	tripping all RCPs, maintaining normal seal injection using pump, Train B charging pump or swing charging pump v power, and preventing failure of the RCP thermal barrier paths are secured by isolating the supply and discharge CCW to RCP thermal barriers are isolated using contain or the CCW to RCP thermal barrier isolation valve.	a Train A/Train B s. RCP seal injection seal injection lines.	
4.1 RCS Pressure Control - Pressure	 Unit 2: Undesired depressurization due to inadvertent sp ensuring auxiliary spray valve remains closed and the L RCPs are shut off. Undesired pressure increase is prev performance-based approach deenergizing all pressuriz 	pop 1 and Loop 2 ented by	
	 Unit 1: Undesired depressurization due to inadvertent sp ensuring auxiliary spray valve remains closed and the L RCPs are shut off. Undesired pressure increase is prev deenergizing all pressurizer heater groups. 	pop 1 and Loop 2	
4.2 RCS Pressure Control - Positive Control	Pressure • Unit 2: Positive control of RCS pressure is accomplished PORV or aux spray for pressure reduction and Pressuria for pressure increase.		
	 Unit 1: Positive control of RCS pressure is accomplished Train B PORV or aux spray for pressure reduction and F Group A/B for pressure increase. 	,	
5 Decay Heat Removal	 Unit 2: Decay heat removal during HSD is accomplished MDAFW pump supplying Steam Generator 2A/2B/2C. N to prevent uncontrolled cooldown. 		
	 Unit 1: Decay heat removal during HSD is accomplished MDAFW pump, Train B MDAFW pump and TDAFW pun Generator 1A/1B/1C. Main feed is isolated to prevent un 	p supplying Steam	
6 Process Monitoring	 Unit 2: 1. Shutdown Margin - Shutdown margin is monit range detector Ch 2. 2. RCS Pressure - RCS pressure narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, pressure for Loop 1/Loop 3. 3. Pressurizer Level - Press monitored by PZR level Ch 2. 4. RCS Temperature - Prespreach RCS Loop 1/Loop 2/Loop 3 temperature is monit Pressure - Steam Generator 2A/2B/2C pressure is moni Steam Generator 2A/2B/2C level is monitored. 	s monitored by PZR RCS wide range surizer level is erfromance-based nitored. 5. SG	
	 Unit 1: 1. Shutdown Margin - Shutdown margin is monit range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pres PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety cha 	sure is monitored by	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1542 of 2430

Fire Area ID: Compliance Basis:	2-015 - Communication Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Performance Goal	Method of Accomplishment	Comments	
	range pressure for Loop 1/Loop 3. 3. Pressurizer Level - monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe 1/Loop 2/Loop 3 temperature is monitored by loop hot an RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pre monitored. 6. SG Level - Steam Generator 1A/1B/1C lev	rature - RCS Loop d cold leg ssure is	· .
7.1 Vital Auxiliaries Electrical	 Unit 2: 1. Electrical power is supplied by off-site power vidiesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 supplied by Train A/Train B distribution equipment. 3. 12 120 VAC power is supplied by Train A/Train B equipment 	V power is 5 VDC power and	
	 Unit 1: 1. Electrical power is supplied by off-site power vidiesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 supplied by Train A/Train B distribution equipment. 3. 12 120 VAC power is supplied by Train A/Train B equipment. 	V power is 5 VDC power and	
7.2 Vital Auxiliaries Service Wate	r Train A/Train B service water is provided with two service v service recirculating to the pond or Train A/Train B service with one service water pump in service recirculating to the essential turbine building loads isolated.	water is provided	
7.3 Vital Auxiliaries Component C	• Unit 2: Train B component cooling water is provided with isolated.	non-essential loads	
	 Unit 1: Train A/Train B component cooling water is provid essential loads isolated. 	ed with non-	
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC essential locations is provided with HVAC equipment corresservice water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Run: 08/18/2012 22:09 Page: 1543 of 2430

1



Fire Area ID: Compliance Basis:	2-015 - Communication Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

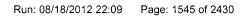
• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Area ID: 2-015 - Communication Room Required Fire Prote Compliance Basis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		Required Fire Protection Systems and Features Risk Evaluation with simplifying deterministic assumptions	
Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-34	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-34	Risk Criteria	Required to meet risk criteria.
Detection	2A-34	DID Criteria	Required to meet DID criteria.
Gaseous Suppression	2A-34	EEEE/LA	Required to support a fire area boundary evaluation.
Gaseous Suppression	2A-34	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	2A-34	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Modifications		Risk Criteria	Modification to install incipient detection and replace trip device in panel Q2R42B0001 breaker LA20; panel Q2R42B0001B, breaker LB14.

1



1



Fire Area ID: Compliance Basis:	2-015 - Communication Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	sk Evaluation
Title	FRE for Fire Area 2-015	
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in c safety margins. The fire risk evaluation determined that with the modification(s) and the installed detection/suppression systems, the applicable risk, c depth, and safety margin criteria were satisfied.	depth and
Δ CDF	1.30E-07	
ΔLERF	1.06E-09	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imba Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a res FRE for this area, the installed detection and suppression systems were identified as required for DID.	
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis accept criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.	
Comments		

:

÷

Fire Area ID: Compliance Basis:	2-015 - Communication Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR ID	U2-2-015-SEP-001		
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater Group A, or prevent remote tripping of the load. Failure to secure the Pressurizer Heater Group A could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-015-SEP-002		
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Charging pump 2A suffers a loss of control power that would prevent remote tripping of the pump and/or potential spurious start of the pump due to fire induced circuit failure. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion .This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-015-SEP-003		
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Charging pump 2B (Aligned Train B) suffers a loss of control power that would prevent remote tripping of the pump and/or potential spurious start of the pump due to fire induced circuit failure. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-015-SEP-004		
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1547 of 243		

Fire Area ID: Compliance Basis:	2-015 - Communication Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Flow control Valve V0347 permits normal charging flow to be injected into the RCS system, for both aux-spray and inventory makeup. This valve is required to modulate in order to control the quantity of charging Inventory that is injected into the RCS System. Fire induced control circuit damage could spuriously close the valve or cause it to fail in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-015-SEP-005
VFDR	Q2E21V0376A:OPEN:CLOSED, VCT OUTLET ISOLATION - The cited circuit is associated with the RWST outlet valve. If the RWST outlet (V336A) were to spuriously open, a valve interlock would initiate swap over to the RWST by closing the VCT outlet isolation valves. Since this the credited lineup for safe shutdown, this failure mode is not considered detrimental to the functionality of this valve. Operator capability will still remain available to initiate swap over . This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-015-SEP-006
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Atmospheric relief is required on the secondary side to relieve steam generator pressure. Since DHR via SG 2A is desired in this fire area, MSARV 3371A must modulate to relieve steam. Fire induced control circuit damage could result in the valve spuriously opening, or failing closed. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-015-SEP-007
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1548 of 2430

Fire Area ID: Compliance Basis:	2-015 - Communication Room VFD Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The Atmospheric Relief Valves are required to modulate in order to relieve steam to the atmosphere and facilitate the removal of decay heat, however they must be closed initially. Fire induced control circuit damage could result in MSARV 3371A spuriously opening. Decay Heat Removal via SG2A is desired in this fire area. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-015-SEP-008
VFDR	Q2N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The Atmospheric Relief Valves are required to modulate in order to relieve steam to the atmosphere and facilitate the removal of decay heat, however they must be closed initially. Fire induced control circuit damage could result in MSARV 3371B spuriously opening. Decay Heat Removal via SG2A is desired in this fire area. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-015-SEP-009
VFDR	Q2N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The Atmospheric Relief Valves are required to modulate in order to relieve steam to the atmosphere and facilitate the removal of decay heat, however they must be closed initially. Fire induced control circuit damage could result in MSARV 3371C spuriously opening. Decay Heat Removal via SG2A is desired in this fire area. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-015-SEP-010
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1549 of 243



Fire Area ID: Compliance Basis:	2-015 - Communication Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	N2B21TR0410:AVAILABLE-TE410:AVAILABLE-TE410, RCS COLD LEG TEMPERATURE RECORDER TR-410 - Decay Heat Removal via SG 2A is desired in this fire area. In order to remove Core Decay Heat, RCS Loop Temperature Indication must remain available for operators at the control room. Fire induced circuit failure to circuits associated with TR0413 or TR0410 (Hot Leg and Cold Leg respectively) could render Loop 1 Temperature Indication unavailable. Furthermore AC panel 2A which provides power to TE410 suffers circuit damage associated with the panel feed. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-015-SEP-011
VFDR	Q2E21V0367:OPEN:OPEN/CLOSED, LETDOWN LINE ISOLATION - Letdown isolation is necessary in order to maintain adequate pressurizer level and thus an adequate amount of RCS Inventory. Letdown isolation can be achieved by closing the letdown line isolation valves LCV0460 or LCV0459, or by closing all 3 Letdown Orifice Isolation Valves (8149A, B, C). Fire induced control circuit damage to the Letdown Orifice Isolation Valves (all 3) could result in the valves spuriously operating. The Letdown Line Isolation valves are subject to spurious operation from control circuit damage. A spurious letdown path could result in an inadequate amount of RCS Inventory. This failure challenges the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria .This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-015-SEP-012
VFDR	Q2N12HV3226:CLOSED:CLOSED, TDAFWP TURBINE STEAM SUPPLY ISOLATION - The TDAFW Pump is not credited in this area, therefore a spurious start of the TDAFW Pump (via spurious steam admission) along with spurious TDAFW feed water admission to a non-credited steam generator could lead to an uncontrolled cool-down condition. The TDAFW regulator valves (HV3228B and C) could spuriously open in this fire area. If an acceptable mitigation strategy exists to close these valves, then spurious steam admission is not a concern, since the feed water flow is isolated. Alternatively, fire induced circuit failure could cause spurious steam admission to the TDAFW Pump. If these steam supplies can be isolated, and hence the TDAFW Pump secured, then, the feed water regulator valves need not be closed. (HV3228B and C). This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	2-016 - Aux Building Battery Room NFPA 805, Section 4.2.3 Deterministic Approach		Fire Area Definition
Fire Zone ID 2212	Description 2212 Battery Room		
			·

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1551 of 2430



21

Fire Area ID: Compliance Basis:		ding Battery Room ion 4.2.3 Deterministic Approach		Performance Goals
Performance Goal		Method of Accomplishment	Comments	
1 Primary Control Station		Plant shutdown is performed from the Control Room.	iy	
2.1 Reactivity Control - Reactor	Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Conditions		Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power.		
3.1 RCS Inventory Control - RC	·	RCS inventory is controlled using Train A charging pump, Train B charging pump, or swing charging pump via Train A/Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isol Paths	C C	Normal letdown is isolated using orifice isolation valves, letdown isolation valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	, , .	
3.3 RCS Inventory Control - RCI		Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump, or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pres		Undesired depressurization due to inadvertent spray is prevented by ensuringauxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off.Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Pos Control		Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		

.

	2-016 - Aux Building Battery Room NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	 Unit 2: Decay heat removal during HSD is accomplished MDAFW pump, Train B MDAFW pump, or TDAFW pump Generator 2A/2B/2C. Main feed is isolated to prevent und 	o supplying Steam	
	 Unit 1: Decay heat removal during HSD is accomplished MDAFW pump, Train B MDAFW pump and TDAFW pum Generator 1A/1B/1C. Main feed is isolated to prevent und 	np supplying Steam	
6 Process Monitoring	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitor range detector Ch 1/Ch 2. 2. RCS Pressure - RCS press PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety char range pressure for Loop 1/Loop 3. 3. Pressurizer Level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe 1/Loop 2/Loop 3 temperature is monitored by loop hot an RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pre monitored. 6. SG Level - Steam Generator 2A/2B/2C level 	sure is monitored by nnel, RCS wide - Pressurizer level is erature - RCS Loop nd cold leg essure is	
	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitor range detector Ch 1/Ch 2. 2. RCS Pressure - RCS press PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety char range pressure for Loop 1/Loop 3. 3. Pressurizer Level monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Tempe 1/Loop 2/Loop 3 temperature is monitored by loop hot an RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pre monitored. 6. SG Level - Steam Generator 1A/1B/1C level 	sure is monitored by nnel, and RCS wide - Pressurizer level is erature - RCS Loop nd cold leg essure is	
7.1 Vital Auxiliaries Electrical	 Unit 2: 1. Electrical power is supplied by off-site power videsel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 supplied by Train A/Train B distribution equipment. 3. 120 VAC power is supplied by Train A/Train B equipment) V power is 25 VDC power and	
	 Unit 1: 1. Electrical power is supplied by off-site power vidiesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 supplied by Train A/Train B distribution equipment. 3. 120 VAC power is supplied by Train A/Train B equipment.) V power is 25 VDC power and	
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service of service recirculating to the pond or Train A/Train B service with one service water pump in service recirculating to the essential turbine building loads isolated.	water is provided	
7.3 Vital Auxiliaries Component Co	poling Water Train A/Train B component cooling water is provided with r isolated.	non-essential loads	- -

Run: 08/18/2012 22:09 Page: 1553 of 2430



Fire Area ID: Compliance Basis:	2-016 - Aux Building Battery Room NFPA 805, Section 4.2.3 Deterministic Approach	,	Performance Goals
Performance Goal	Method of Accomplishment	Comments	· · · · · · · · · · · · · · · · · · ·
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B Hessential locations is provided with HVAC equipment service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-016 - Aux Building Battery Room Engineering Evaluation NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID	SM-C051326701-006 Identify Regulatory Fire Barriers
Revision	3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,
	• Elements with construction features equal to 3-hr boundaries were credited as such,
	• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.
	I,

!



Fire Area ID: Compliance Basis:	2-016 - Aux Building Battery Room NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation
Title	N/A	
Summary	This fire area complies with the deterministic requirements of Section 4.2.3 of NFPA 805. Therefore, a fire risk evaluation is not required.	
∆ CDF		
∆ LERF		
DID Maintained		
Safety Margin Maintained		
Comments		
ч.		

Fire Safety Analysis Data Manager (4.1)

a

Fire Area ID: Compliance Basis:	2-017 - Aux Building Batter Unit 2: NFPA 805, Section Unit 1: NFPA 805, Section	y Room 4.2.4.2 Performa 4.2.3 Determinist	nce-Based Appr ic Approach	oach - Fire Risk E	valuation with simp	olifying determin	istic assumption	IS	Fire Area Definitio
	escription 214 Battery Room								
						÷			
								`	
Fire Safety Analysis Data Manag	ger (4.1)			Farley			Run: 08/18/2	012 22:09	Page: 1557 of 2430
							-		

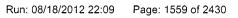
· •



Fire Area ID: 2-017 - Aux Building Battery Room Performance Goals Compliance Basis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach Performance Goal Method of Accomplishment Comments 1 Primary Control Station Plant shutdown is performed from the Control Room. 2.1 Reactivity Control - Reactor Trip Reactor is manually tripped from the Control Room. 2.2 Reactivity Control - Maintain Subcritical Unit 2: Subcritical conditions are maintained by isolating the VCT to prevent Conditions boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump via Train B power. • Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power. 3.1 RCS Inventory Control - RCS Makeup Unit 2: RCS inventory is controlled using Train B charging pump, or swing charging pump via Train B power aligned to the RWST. • Unit 1: RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST. 3.2 RCS Inventory Control - Isolate Leakage Normal letdown is isolated using orifice isolation valves, letdown isolation Paths valve or letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve 3.3 RCS Inventory Control - RCP Seal Integrity Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train B charging pump, or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve. Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves. or the CCW to RCP thermal barrier isolation valve.

Compliance Basis: Unit 2: NFPA 8	uilding Battery Room 305, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 305, Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
4.1 RCS Pressure Control - Pressure Transient	• Unit 2: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups.	
	 Unit 1: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 	
4.2 RCS Pressure Control - Positive Pressure Control	• Unit 2: Positive control of RCS pressure is accomplished with Train A/Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group B for pressure increase.	
	• Unit 1: Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	
5 Decay Heat Removal	 Unit 2: Decay heat removal during HSD is accomplished using Train B MDAFW pump or TDAFW pump supplying Steam Generator 2A/2B/2C. Main feed is isolated to prevent uncontrolled cooldown. 	
	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 	
6 Process Monitoring	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C level is monitored. 	
	• Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored.	

Fire Safety Analysis Data Manager (4.1)





Fire Area ID: Compliance Basis:	2-017 - Aux Building Battery Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	FPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Performance Goal	Method of Accomplishment	. Comments		
7.1 Vital Auxiliaries Electrical	 Unit 2: 1. Electrical power is supplied by off-site diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV supplied by Train A/Train B distribution equipme 120 VAC power is supplied by Train A/Train B ed 	and 600 V power is nt. 3. 125 VDC power and		
	Unit 1: 1. Electrical power is supplied by off-site diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV supplied by Train A/Train B distribution equipme 120 VAC power is supplied by Train A/Train B ec	and 600 V power is nt. 3. 125 VDC power and		
7.2 Vital Auxiliaries Service Wate	er Train A/Train B service water is provided with two service recirculating to the pond or Train A/Train E with one service water pump in service recirculatin essential turbine building loads isolated.	3 service water is provided		
7.3 Vital Auxiliaries Component	• Unit 2: Train B component cooling water is provid isolated.	ded with non-essential loads		
	 Unit 1: Train A/Train B component cooling water essential loads isolated. 	is provided with non-		
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train essential locations is provided with HVAC equipment service water train.			

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-017 - Aux Building Battery Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	ENGDOC, SM-97-1561-001 Fire Barrier Penetration Seal Limiting Design Parameter Evaluation
Inactive	Νο
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	Evaluate various penetration seals which, as a result of plant walkdowns of as built configurations, exhibited one or more Limiting Design Parameters (LDPs) which were outside limits previously established via qualification test reviews.
	Bases for Acceptability:
	The basis of the evaluation was to establish the acceptability of the field established configurations through either:
	 Utilizing engineering judgment based on additional reviews of test reports to justify the LDP in question; Refinement of field judgments through review of design drawing/documentation; or Establishing additional technical bases which allowed reapplication of acceptance criteria for LDPs.
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described,

Fire Safety Analysis Data Manager (4.1)





 Fire Area ID:
 2-017 - Aux Building Battery Room
 Engineering Evaluations

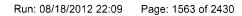
 Compliance Basis:
 Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions

 Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Compliance Basis:	2-017 - Aux Building Battery Room Required Fire Protection Systems tasis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		
Required FP System(s)/Feature(s	s) Description	Required By	Comments
	2A-32	DID Criteria	Required to meet DID criteria.







Fire Area ID: Compliance Basis:	2-017 - Aux Building Battery Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		
Title	FRE for Fire Area 2-017		
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.		
ΔCDF	1.79E-07		
ΔLERF	2.71E-10		
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.		
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.		
Comments			

1

.

Fire Area ID: Compliance Basis:	2-017 - Aux Building Battery Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach			
VFDR ID	U2-2-017-SEP-001			
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater Group A, or prevent remote tripping of the load. Failure to secure the Pressurizer Heater Group A could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-017-SEP-002			
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Charging pump 2B (aligned to Train A) suffers a loss of control power that would prevent remote tripping of the pump and/or potential spurious start of the pump due to fire induced circuit failure. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion .This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-017-SEP-003			
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Charging pump 2B (aligned to Train A) suffers a loss of control power that would prevent remote tripping of the pump and/or potential spurious start of the pump due to fire induced circuit failure. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion .This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-017-SEP-004			
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1565 of 2430			



Fire Area ID: Compliance Basis:	2-017 - Aux Building Battery Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Flow control Valve V0347 permits normal charging flow to be injected into the RCS system, for both aux-spray and inventory makeup. This valve is required to modulate in order to control the quantity of charging Inventory that is injected into the RCS System. Fire induced control circuit damage could spuriously close the valve or cause it to fail in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disp <i>o</i> sition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-017-SEP-005
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - The Atmospheric Relief Valves are required to modulate in order to relieve steam to the atmosphere and facilitate the removal of decay heat, however they must be closed initially. Fire induced control circuit damage could result in MSARV 3371A spuriously opening or failing closed. Decay Heat Removal via SG2A is desired in this fire area. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-017-SEP-006
VFDR	Q2N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The Atmospheric Relief Valves are required to isolate the secondary side initially. Decay Heat Removal via SG2A is desired in this fire area. Fire induced circuit failure to MSARV 3371A could result in the valve spuriously opening. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-017-SEP-007

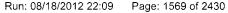
Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-017 - Aux Building Battery Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The Atmospheric Relief Valves are required to isolate the secondary side initially. Decay Heat Removal via SG2A is desired in this fire area. Fire induced circuit failure to MSARV 3371B could result in the valve spuriously opening. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-017-SEP-008
VFDR	Q2N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - The Atmospheric Relief Valves are required to isolate the secondary side initially. Decay Heat Removal via SG2C is desired in this fire area. Fire induced circuit failure to MSARV 3371B could result in the valve spuriously opening. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.



Fire Area ID: Compliance Basis:	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-E Unit 1: NFPA 805, Section 4.2.3 Deterministic Ap	Based Approach - Fire Risk Evalu proach	ation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID 2224	Description 2224 dc Switchgear Room			
	、			
			÷	
	· · ·			
Fire Safety Analysis Data	a Manager (4.1)	Farley	Run: 08/18/2012 22	:09 Page: 1568 of 2430
			•	

Compliance Basis: Ur	018 - Aux Building DC Switchgear Room nit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalua nit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Performance Goal ation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Sub Conditions	 • Unit 2: Subcritical conditions are maintained by isolating the VCT boron dilution and by charging borated water from the RWST usin charging pump or swing charging pump via Train B power. 	
	 Unit 1: Subcritical conditions are maintained by isolating the VCT boron dilution and by charging borated water from the RWST usin charging pump, Train B charging pump or swing charging pump A/Train B power. 	ng Train A
3.1 RCS Inventory Control - RCS Ma	 • Unit 2: RCS inventory is controlled using Train B charging pump of charging pump via Train B power aligned to the RWST. 	or swing
	 Unit 1: RCS inventory is controlled using Train A charging pump, charging pump or swing charging pump via Train A/Train B powe the RWST. 	
3.3 RCS Inventory Control - RCP Se	• Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is mainta tripping all RCPs, maintaining normal seal injection using Train B pump or swing charging pump via Train B power, and preventing the RCP thermal barriers. RCP seal injection paths are secured b the supply and discharge seal injection lines. CCW to RCP therm are isolated using containment isolation valves.	charging failure of by isolating
	 Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is mainta tripping all RCPs, maintaining normal seal injection using Train A pump, Train B charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP s paths are secured by isolating the supply and discharge seal inje- CCW to RCP thermal barriers are isolated using containment isol or the CCW to RCP thermal barrier isolation valve. 	, charging A/Train B seal injection ction lines.
4.1 RCS Pressure Control - Pressure	 Unit 2: Undesired depressurization due to inadvertent spray is proving auxiliary spray valve remains closed and the Loop 1 an RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater 	d Loop 2
	 Unit 1: Undesired depressurization due to inadvertent spray is pre ensuring auxiliary spray valve remains closed and the Loop 1 an RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 	d Loop 2
Fire Safety Analysis Data Manager (4	4.1) Farley	Run: 08/18/2012 22:09 Page: 1569 of 2430



2-018 - Aux Building DC Switchgear Room Fire Area ID: Performance Goals Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Compliance Basis: Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach Performance Goal Method of Accomplishment Comments 4.2 RCS Pressure Control - Positive Pressure Unit 2: Positive control of RCS pressure is accomplished with Train B PORV Control for pressure reduction and Pressurizer Heater Group B for pressure increase. Unit 1: Positive control of RCS pressure is accomplished with Train A PORV. Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase. 5 Decay Heat Removal • Unit 2: Decay heat removal during HSD is accomplished using Train B MDAFW pump supplying Steam Generator 2C. Main feed is isolated to prevent uncontrolled cooldown, Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 6 Process Monitoring • Unit 2: 1. Shutdown Margin - Performance-based approach shutdown margin is monitored. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1. 3. Pressurizer Level - Performance-based approach pressurizer level is monitored. 4. RCS Temperature - Performance-based approach RCS Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3, 4, RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored, 6, SG Level - Steam Generator 1A/1B/1C level is monitored. 7.1 Vital Auxiliaries Electrical • Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG-2B, 2, 4,16 kV and 600 V power is supplied by Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train B equipment. • Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B. diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. Fire Safety Analysis Data Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1570 of 2430

Fire Area ID: Compliance Basis:	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fin Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	e Risk Evaluation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
7.2 Vital Auxiliaries Service Water	 Unit 2: Train B service water is provided with two service recirculating to the pond or Train B service service water pump in service recirculating to the pot turbine building loads isolated. 	water is provided with one
	 Unit 1: Train A/Train B service water is provided wit pumps in service recirculating to the pond or Train / provided with one service water pump in service rec and non-essential turbine building loads isolated. 	A/Train B service water is
7.3 Vital Auxiliaries Component C	ooling Water • Unit 2: Train B component cooling water is provided isolated.	l with non-essential loads
	 Unit 1: Train A/Train B component cooling water is essential loads isolated. 	provided with non-
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B essential locations is provided with HVAC equipment service water train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.







Fire Area ID: Compliance Basis:	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Engineering Evaluations	
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3		
Inactive	No		
Functionally Equivalent	No		
Adequate for the Hazard	Yes		
Summary	Purpose:		
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines. Bases for Acceptability:		

• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Run: 08/18/2012 22:09 Page: 1572 of 2430

Compliance Basis: U	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		Required Fire Protection Systems and Features Risk Evaluation with simplifying deterministic assumptions
Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-32	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-32	Risk Criteria	Required to meet risk criteria.
Detection	2A-32	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Procedures / Guidance		Risk Criteria	 Improvements to procedures necessary to incorporate recovery actions required to meet risk criteria.
Modifications		Risk Criteria	Modification to wrap conduits 2VAHD319 and 2VAID304 with 1 hr fire rated wrap to prevent fire damage due to HGL and provide fuse or other electrical isolation device at the DC shunt connection point.
Modifications	-	DID Criteria	Modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available.

ť.



Attachment C

Fire Area ID: Compliance Basis:	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 2-018
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with specified recovery actions, modification to wrap conduits and provide fuse or other electrical isolation device at the DC shunt connection point, Modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available and the installed detection system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	3.51E-07
Δ LERF	1.07E-09
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, Modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available and the installed detection system were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Area ID: Compliance Basis:	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-018-SEP-001
VFDR	Q2N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric Relief must initially be isolated on the secondary side. Fire induced circuit damage to SG 2A MSARV could result in the valve spuriously opening. Failure to ensure isolation on the secondary side challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-018-SEP-002
VFDR	Q2N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric Relief must initially be isolated on the secondary side. Fire induced circuit damage to SG 2B MSARV could result in the valve spuriously opening. Failure to ensure isolation on the secondary side challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-018-SEP-003
VFDR	Q2N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric Relief must initially be isolated on the secondary side. Fire induced circuit damage to SG 2C MSARV could result in the valve spuriously opening. Failure to ensure isolation on the secondary side challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
/FDR ID	U2-2-018-SEP-004

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1575 of 2430



Fire Area ID: Compliance Basis:	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	N2B21TR0413:AVAILABLE-TE433:AVAILABLE-TE433, RCS HOT LEG TEMPERATURE RECORDER TR-413 - Decay Heat Removal via SG 2C is desired in this fire area. In order to successfully remove and monitor decay heat removal, RCS and SG Process Instrumentation must remain available. A loss of power to TE433 from panel 2A will prevent the monitoring of RCS Loop 3 Hot Leg Temperature. AC Panel 2A may not remain available due to a loss of power (Cable and upstream supply). Failure to monitor RCS Hot Leg temperature conditions challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-018-SEP-005
VFDR	N2B21TR0410:AVAILABLE-TE430:AVAILABLE-TE430, RCS COLD LEG TEMPERATURE RECORDER TR-410 - Decay Heat Removal via SG 2C is desired in this fire area. In order to successfully remove and monitor decay heat removal, RCS and SG Process Instrumentation must remain available. A loss of power to TE430 from panel 2B will prevent the monitoring of RCS Loop 3 Cold Leg Temperature. AC Panel 2B may not remain available due to a loss of power (Cable and upstream supply). Failure to monitor RCS Cold Leg temperature conditions challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-018-SEP-006
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater Group A, or prevent remote tripping of the load. Furthermore a loss of control power at panel 2B would prevent tripping of the load remotely. Failure to secure the Pressurizer Heater Group A could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID	U2-2-018-SEP-007	
VFDR	N2B31LI0460:AVAILABLE:AVAILABLE, PRESSURIZER LEVEL INDICATOR LI-460 (PROTECTION CHANNEL II) - RCS Pressurizer Level Indication must remain available from the control room in order to monitor Pressurizer Level conditions, and permit operators to accommodate unwanted RCS transients. A loss of power to the Channel 2 indicator LI0460 could render the indicator unavailable for indication. The power supply cabinet is supplied from MCC 2U which only suffers an upstream loss of control power at load center 2D. The AC supply may remain available. All other pressurizer level indicators suffer circuit damage. Failure to ensure pressure indication challenges the RCS Pressure control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-018-SEP-008	
VFDR	Q2B31PT0456:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE TRANSMITTER - MCC 2U supplies this instrument transmitter loop via AC panel 2D. MCC 2U is supplied from Load Center 2D, which only suffers a loss of DC control power in this area. The AC supply remains unaffected, however over current protection cannot be guaranteed, and thus coordination issues could arise. A loss of AC power instrument transmitter could initiate a spurious SIAS signal, which could lead to isolation of a possible credited charging injection path via the RCP seals (Close the Inboard RCP Seal Valves). These failures challenge the RCS Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-018-SEP-009	
VFDR	Q2C22LT0474:AVAILABLE:AVAILABLE, STEAM GENERATOR 2A LEVEL TRANSMITTER - MCC 2U supplies power to this transmitter through AC panel 2C. MCC 2U is supplied from Load Center 2D, which only suffers a loss of DC control power in this area. The AC supply remains unaffected, however over current protection cannot be guaranteed, and thus coordination issues could arise. A loss of AC power to this transmitter could initiate a spurious ATWS signal, thereby opening the feedwater regulating valves. A spurious open of the SG 2B Feedwater Regulating Valve HV3228B, could inadvertently supply feedwater to the non-credited SG 2B. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
	credited SG 2B. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based a	

2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
U2-2-018-SEP-010
Q2C22LT0484:AVAILABLE:AVAILABLE, STEAM GENERATOR 2B LEVEL TRANSMITTER - MCC 2U supplies power to this transmitter through AC panel 2C. MCC 2U is supplied from Load center 2D, which only suffers a loss of DC control power in this area. The AC supply remains unaffected, however over current protection cannot be guaranteed, and thus coordination issues could arise. A loss of AC power to this transmitter could initiate a spurious SG 2B Lo-Lo signal, thereby opening the feed water regulating valves. A spurious open of the SG2B Feed water Regulating Valve HV3228B, could inadvertently supply Feed water to the non-credited SG 2B. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
U2-2-018-SEP-011
Q2C22LT0494:AVAILABLE:AVAILABLE, STEAM GENERATOR 2C LEVEL TRANSMITTER - MCC 2U supplies power to this transmitter through AC panel 2C. MCC 2U is supplied from Load center 2D, which only suffers a loss of DC control power in this area. The AC supply remains unaffected, however over current protection cannot be guaranteed, and thus coordination issues could arise. A loss of AC power to this transmitter could initiate a spurious MDAFW Pump start signal. While the pump is credited, a spurious start before the credited lineup is established could lead to potential pump damage. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
U2-2-018-SEP-012
-

Fire Area ID: Compliance Basis:	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR	Q2E13PT0950:AVAILABLE:AVAILABLE, CONTAINMENT PRESSURE TRANSMITTER PROTECTION CHANNEL I - MCC 2U supplies this instrument transmitter loop via AC panel 2C. MCC 2U is supplied from Load center 2D, which only suffers a loss of DC control power in this area. The AC supply remains unaffected, however over current protection cannot be guaranteed, and thus coordination issues could arise. A loss of AC power instrument transmitter could initiate a spurious CIAS signal, which could isolate the backup air supply valve HV2228 to the PORVs. This would lead to an inability to cycle the PORVs in order to de-pressurize the RCS system. These failures challenge the RCS Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-018-SEP-013	
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - Charging pump 2C is credited for operation in this area. Failure to trip the non credited charging pump 2A or 2B (aligned to Train A) due to a loss of control power or control circuit fire induced failure, could lead to an overcharging condition, thereby challenging the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-018-SEP-014	
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Q1E21V0347 - Charging Flow Control Valve. The valve is normally modulated, required modulated to provide makeup. The valve suffers control circuit damage that could result in spurious opening or closure of the valve. Fire induced valve control circuit damage and/or a loss of power from Process Cabinet B and F could result in the valve spuriously closing or failing in the open position. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-018-SEP-015	
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1579 of 2430	



Fire Area ID: Compliance Basis:	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	N2C55NI0031A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31A - Source Range indication is required in order to monitor subcritical conditions. A loss of AC power to both source range channel detectors would result in an inability to monitor these subcritical conditions. AC Panels 2A and 2B supply vital AC power to channel 1 and channel 2 source range detectors. Fire induced cable damage, along with a loss of the upstream AC supply will cause these power supplies to be unavailable for a fire in this area. This failure challenges the Reactivity Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-018-SEP-016
VFDR	Q2N11PV3371C:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Atmospheric relief on the secondary side is necessary in order to achieve a controlled cool down rate. Failure to modulate the SG 2C ARV (PV3371C) due to a loss of power or control would cause the valve to fail closed. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.
VFDR ID	U2-2-018-SEP-017
VFDR	Q2N23L0001:ENERGIZED:ENERGIZED, TDAFW PUMP UNINTERRUPTABLE POWER SUPPLY - MCC 2A supplies power to the TDAFW Pump UPS. MCC 2A is supplied from Load center 2D, which only suffers a loss of DC control power in this area. The AC supply remains unaffected, however over current protection cannot be guaranteed, and thus coordination issues could arise. A loss of power to the TDAFW UPS could cause the corresponding SG Feed water Regulating Valves HV3228A and B to fail open. This would result in an inadvertent supply of Feed water to Non-Credited Steam Generators. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-018-SEP-018

Fire Area ID: Compliance Basis:	2-018 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	N2P19C0001C:STANDBY:ON, SERVICE AIR COMPRESSOR 2C - Load Center 2A supplies power to Compressor 2C. Load Center 2A is supplied from Load center 2D, which only suffers a loss of DC control power in this area. The AC supply remains unaffected, however over current protection cannot be guaranteed, and thus coordination issues could arise. Failure to provide power to the compressor, would result in a loss of instrument air to containment. This in turn, would prevent control of various Air-Operated Valves associated with regulating RCS Pressure (PORVs, Aux Spray) or Decay Heat Removal (MSARVs). These failures challenge the RCS Pressure Control and Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Safety Analysis Data Manager (4.1)

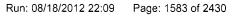




Fire Area ID: Compliance Basis:	2-019 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
2226	2226 dc Switchgear Room	

Compliance Basis: Unit 2: NF	ux Building DC Switchgear Room PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sin PA 805, Section 4.2.3 Deterministic Approach	Performance Goals
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	 Unit 2: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump via Train A power. 	
	 Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power. 	
3.1 RCS Inventory Control - RCS Makeup	 Unit 2: RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST. 	
	 Unit 1: RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST. 	
3.2 RCS Inventory Control - Isolate Leakage Paths	• Unit 2: Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
	 Unit 1: Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve. 	
3.3 RCS Inventory Control - RCP Seal Integ	 Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve. 	
	 Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging 	

Fire Safety Analysis Data Manager (4.1)





T

Compliance Basis: Unit 2:	 Aux Building DC Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim NFPA 805, Section 4.2.3 Deterministic Approach 	Performance Goals
Performance Goal	Method of Accomplishment	Comments
	pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Tr.	 Unit 2: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups. 	
	 Unit 1: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 	
4.2 RCS Pressure Control - Positive Pre Control	• Unit 2: Positive control of RCS pressure is accomplished with performance- based approach Train A PORV for pressure reduction and Pressurizer Heater Group A for pressure increase.	
	 Unit 1: Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase. 	
5 Decay Heat Removal	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW pump supplying Steam Generator 2A/2B. Main feed is isolated to prevent uncontrolled cooldown. 	
	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 	
6 Process Monitoring	 Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2, RCS wide range pressure for Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2. 4. RCS Temperature - RCS Loop 1/Loop 2 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 	- -
	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is 	
Fire Safety Analysis Data Manager (4.1)	Farley	Run: 08/18/2012 22:09 Page: 1584 of 2430

Compliance Basis: Un	19 - Aux Building DC Switchgear Room it 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation it 1: NFPA 805, Section 4.2.3 Deterministic Approach	A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Performance Goal	Method of Accomplishment	Comments		
	monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RC3 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monito		·	
7.1 Vital Auxiliaries Electrical	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 2A/S diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied A distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A equipment. 	by Train		
	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/S diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power 120 VAC power is supplied by Train A/Train B equipment. 			
7.2 Vital Auxiliaries Service Water	 Unit 2: Train A service water is provided with two service water pump service recirculating to the pond or Train A service water is provided service water pump in service recirculating to the pond and non-esse turbine building loads isolated. 	with one		
	 Unit 1: Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service provided with one service water pump in service recirculating to the p and non-essential turbine building loads isolated. 	water is		
7.3 Vital Auxiliaries Component Cooli	 • Unit 2: Train A component cooling water is provided with non-essenti- isolated. 	al loads		
· · · · · ·	 Unit 1: Train A/Train B component cooling water is provided with non- essential loads isolated. 	-		
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room coo essential locations is provided with HVAC equipment corresponding to service water train.			

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Run: 08/18/2012 22:09 Page: 1585 of 2430







Fire Area ID: Compliance Basis:	2-019 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

...

~ /

Compliance Basis:	2-019 - Aux Building DC Switchgear Room Jnit 2: NFPA 805, Section 4.2.4.2 Performa Jnit 1: NFPA 805, Section 4.2.3 Determinist		Required Fire Protection Systems and Features e Risk Evaluation with simplifying deterministic assumptions
Required FP System(s)/Feature() Description	Required By	Comments
Detection	2A-32	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-32	Risk Criteria	Required to meet risk criteria.
Detection	2A-32	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to meet risk criteria.
Modifications		Risk Criteria	Modification to wrap conduit 2VCHF263 with 1 hr fire rated wrap and provide fuse or other elec. iso. device at the DC shunt connection pt. and replace trip device in panel Q2R42B0001B, breaker LB07.







•;





Fire Area ID: Compliance Basis:	2-019 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 2-019
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the specified recovery actions, modification(s), and the installed detection system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	6.10E-07
ΔLERF	4.56E-09
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

.

2

Fire Area ID: Compliance Basis:	2-019 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID	U2-2-019-SEP-001	
VFDR	Q2B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 2B DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater Group B, or prevent remote tripping of the load. Furthermore a loss of control power at panel 2E would prevent tripping of the load remotely. Failure to secure the Pressurizer Heater Group B could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-019-SEP-003	
VFDR	Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - De-pressurization of the RCS system is required in order to accommodate RCS Pressure changes. The Pressurizer PORVs are cycled in order to achieve RCS de-pressurization. A loss of instrument air due to air intake valve failures (power supply failures to these valves) could impair the ability to cycle the PORVs. This failure challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.	
VFDR ID	U2-2-019-SEP-005	
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - Charging via the CVCS system is required to maintain RCS Inventory, however only one charging pump is credited for operation. Fire induced control circuit damage to Pump 2C and/or Pump 2B Train B Charging could result in spurious starting of the pump, or a failure to trip the pump. Furthermore control power to trip the pump is not available from panel 2E. Failure to trip these pumps could lead to an overcharging condition by adding an excessive amount of Charging Inventory to the RCS. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Area ID: Compliance Basis:	2-019 - Aux Building DC Switchgear Room Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID	U2-2-019-SEP-008	
VFDR	Q2R16B0007:ENERGIZED:ENERGIZED, 600V LOADCENTER 2E - The load center is normally energized required energized. Control power at Load Center 2E is required to ensure operation of load center. Failure of control power to the load center, can lead to a loss of coordination may contribute to an inadvertent load center supply breaker trip, and a loss of all AC power to the load center. The failures challenge the electrical support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-019-SEP-009	
VFDR	Q2E16H0010:STANDBY:ON, 600V LOADCENTER 2E ROOM AIR COOLER - The cooler is normally available, required available. Fire induced circuit dama to cooler prevents the ability to cooler to support electrical equipment. This failure can lead to failure of required electrical equipment. The failures challenges the HVAC support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	

1

Fire Area ID: Compliance Basis:		
Fire Zone ID	Description	
2210	2210 Corridor	
2211	2211 Corridor	
2213	2213 Battery Service Room	
2225	2225 Battery Charger Room	
2228	2228 Corridor	
2234	2234 Hallway	
2244	2244 Roof of Battery 2B Room, El. 131'-0"	
2245	2245 Roof of Battery 2A Room, EI. 131'-0"	





Compliance Basis: Ur	020 - Aux Building nit 2: NFPA 805, Section 4.2.4.2 Performance-Based nit 1: NFPA 805, Section 4.2.3 Deterministic Approa	805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Performance Goal	Method of Accomplishment		Comments	
1 Primary Control Station	Plant shutdown is performed from the	Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the 0	Control Room.		
2.2 Reactivity Control - Maintain Sub Conditions	• Unit 2: Subcritical conditions are ma boron dilution and by charging borat performance-based approach Train pump via Train A power.	ed water from the RWST using	rent	
	 Unit 1: Subcritical conditions are ma boron dilution and by charging borat charging pump, Train B charging pu A/Train B power. 	ed water from the RWST using Trair	۱A	
3.1 RCS Inventory Control - RCS Ma	• Unit 2: RCS inventory is controlled u A charging pump or swing charging RWST.	U		
	 Unit 1: RCS inventory is controlled u charging pump or swing charging pu the RWST. 			· · · ·
3.2 RCS Inventory Control - Isolate Paths	Leakage Normal letdown is isolated using orific valve or letdown path containment iso using one or more excess letdown or leakage paths are isolated using Train to RHR high/low pressure interface is inboard isolation valve and Train A/Tr	lation valve. Excess letdown is isola containment isolation valves. PZR P A A PORV and Train B PORV. The R isolated using the Train A/Train B R	ORV RCS	
3.3 RCS Inventory Control - RCP Se	 Unit 2: Maintain RCP Seal Integrity performance-based approach trippin seal injection using Train A charging A power, and preventing failure of th injection paths are secured by isolat injection lines. CCW to RCP therma isolation valves or the CCW to RCP 	ag all RCPs, maintaining normal pump or swing charging pump via 1 e RCP thermal barriers. RCP seal ing the supply and discharge seal l barriers are isolated using containm	Frain	
	 Unit 1 Maintain RCP Seal Integrity - tripping all RCPs, maintaining norma pump, Train B charging pump or sw power, and preventing failure of the paths are secured by isolating the si CCW to RCP thermal barriers are is or the CCW to RCP thermal barrier 	RCP seal integrity is maintained by al seal injection using Train A chargin ing charging pump via Train A/Train RCP thermal barriers. RCP seal inje upply and discharge seal injection lin plated using containment isolation va	B ction les.	
		Code y	Dum: 09/19/2012 22	.00 Deces 1502 of 2420

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1592 of 2430

Compliance Basis: Ur	20 - Aux Building it 2: NFPA 805, Section 4.2.4.2 Performance it 1: NFPA 805, Section 4.2.3 Deterministic A	805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Performance Goal	Method of Accomplishment		Comments	
4.1 RCS Pressure Control - Pressure	ensuring auxiliary spray valve RCPs are performance-based	ation due to inadvertent spray is prevented by e remains closed and the Loop 1 and Loop 2 l approach shut off. Undesired pressure ormance-based approach deenergizing all		
	ensuring auxiliary spray valve	ation due to inadvertent spray is prevented by remains closed and the Loop 1 and Loop 2 pressure increase is prevented by eater groups.		
4.2 RCS Pressure Control - Positive Control	 Onit 2: Positive control of RCS based approach Train A POR' 	pressure is accomplished with performance- V for pressure reduction and performance- leater Group A for pressure increase.		
	Unit 1: Positive control of RCS Train B PORV or aux spray fo Group A/B for pressure increa	pressure is accomplished with Train A PORV, r pressure reduction and Pressurizer Heater se.		
5 Decay Heat Removal	based approach Train A MDA	ring HSD is accomplished using performance- FW pump or TDAFW pump supplying Steam plated to prevent uncontrolled cooldown.		
	MDAFW pump, Train B MDAF	uring HSD is accomplished using Train A W pump and TDAFW pump supplying Steam ad is isolated to prevent uncontrolled cooldown.		
6 Process Monitoring	margin is monitored. 2. RCS narrow range Ch 1/Ch 2, RCS 3. 3. Pressurizer Level - Pres 2. 4. RCS Temperature - Per temperature is monitored by lo	ssurizer level is monitored by PZR level Ch formance-based approach RCS Loop 2 pop hot and cold leg RTDs. 5. SG Pressure - ressure is monitored. 6. SG Level - Steam		
	Unit 1: 1. Shutdown Margin - range detector Ch 1/Ch 2. 2. PZR narrow range Ch 1/Ch 2/ range pressure for Loop 1/Loo monitored by PZR level Ch 1/ 1/Loop 2/Loop 3 temperature RTDs. 5. SG Pressure - Stea	Shutdown margin is monitored by source RCS Pressure - RCS pressure is monitored by Ch 3, PZR non-safety channel, and RCS wide op 3. 3. Pressurizer Level - Pressurizer level is Ch 2/Ch 3. 4. RCS Temperature - RCS Loop is monitored by loop hot and cold leg am Generator 1A/1B/1C pressure is am Generator 1A/1B/1C level is monitored.		
Fire Safety Analysis Data Manager (4	.1)	Farley	Run: 08/18/2012 22:0	Page: 1593 of 2430

Fire Area ID: 2-020 - Aux Building **Performance Goals** Compliance Basis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach Performance Goal Method of Accomplishment Comments 7.1 Vital Auxiliaries Electrical • Unit 2: 1. Electrical power is supplied by diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train B equipment. • Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 7.2 Vital Auxiliaries Service Water • Unit 2: Train A service water is provided with two service water pumps in service recirculating to the pond or Train A service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. • Unit 1: Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 7.3 Vital Auxiliaries Component Cooling Water • Unit 2: Train A component cooling water is provided with non-essential loads isolated. Unit 1: Train A/Train B component cooling water is provided with nonessential loads isolated. 7.4 Vital Auxiliaries HVAC Unit 2: Control Room cooling is provided by Train A HVAC. Room cooling at essential locations is provided with performance-based approach HVAC equipment corresponding to the service water train. • Unit 1: Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-020 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Engineering Evaluations		
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3			
Inactive	No			
Functionally Equivalent	No			
Adequate for the Hazard	Yes			
Summary	Purpose:			
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.			
	Bases for Acceptability:			
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, 			
	 The construction of the boundary and the potential issue with the element in question was described, 			
	 The fire hazards and fire protection features on both sides of the barrier were described, 			
	and the second			

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.





Fire Area ID: Compliance Basis: 2-020 - Aux Building

Required Fire Protection Systems and Features

Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach

Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-32 [2213]	Risk Criteria	Required to meet risk criteria.
Detection	2A-32 [2213]	DID Criteria	Required to meet DID criteria.
Detection	2A-32 [2225]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-32 [2225]	Risk Criteria	Required to meet risk criteria.
Detection	2A-32 [2225]	DID Criteria	Required to meet DID criteria.
Detection	2A-36 [2210,2228,2234]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-36 [2210,2228,2234]	Risk Criteria	Required to meet risk criteria.
Detection	2A-36 [2210,2228,2234]	DID Criteria	Required to meet DID criteria.
Detection	2A-36 [2211, 2244, 2245]	Risk Criteria	Required to meet risk criteria.
Detection	2A-36 [2211, 2244, 2245]	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-36 [2210]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-36 [2210]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-36 [2210]	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-36 [2211, 2213, 2245]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-36 [2234]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-36 [2234]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-36 [2244]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-36 [2244]	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Modifications		Risk Criteria	Modification to provide fuse or other electrical isolation device at the DC shunt connection point and replace trip device in panel Q2R42B0001A, breaker LA20; Q2R42B0001B, breaker LB07, LB14.
Modifications		DID Criteria	Modification to provide Train B power to the temperature recorder to maintain RCS

Modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available.

Fire Area ID: Compliance Basis:	2-020 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach			
Title	FRE for Fire Area 2-020			
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDF NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth safety margins. The fire risk evaluation determined that with the modification(s) and the installed detection/suppression systems, the applicable risk, defense depth, and safety margin criteria were satisfied.			
Δ CDF	7.26E-08			
ΔLERF	1.46E-10			
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available the installed and the installed detection and suppression systems were identified as required for DID.			
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained."			
Comments				

•

Fire Area ID: Compliance Basis:	2-020 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach			
VFDR ID	U2-2-020-HVAC-001			
VFDR	Q2R42B0001A:ENERGIZED:ENERGIZED-BC2A, 125V DC BUS 2A - This component, 125V DC Bus 2A, requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component challenges HVAC Support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-020-HVAC-002			
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - This component, Charging Pump 2A, requires HVAC support to remain functional. Charging via the CVCS system is required to maintain RCS Inventory for makeup. Charging via Pump 2A is sought after in this fire area. A loss of the Pump 2A cooler could result from fire induced circuit failure. Without HVAC support, the pump may not be available. Failure to establish charging challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-020-HVAC-003			
VFDR	Q2N23P0001A:OFF:ON/OFF, 2A MDAFW PUMP - This component, MDAFW Pump 2A, requires HVAC support to remain functional. The Auxiliary Feed water Pump 2A is required to supply the Steam Generators with High Pressure Feed water in order to remove Decay Heat Removal. Fire induced control circuit damage could render the AFW Pump 2A Cooler unavailable in this fire area. A loss of HVAC to the Aux Feed water Pump Room could potentially render the pump unavailable. Failure to ensure availability of the Aux Feed water Pump challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-020-IA-001			
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1598 of 243			

Fire Area ID: Compliance Basis:	2-020 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - This component requires instrument air to p function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. The Pressurizer required to cycle in order to de-pressurize the RCS System. A loss of instrument air will result in the valve failing in the closed position Pressurizer Power Relief Valve challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-1 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-IA-002	
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 permits normal charge flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A of instrument air will result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-IA-003	
VFDR	Q2N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrumen is assumed to be unavailable in this fire area because air loss paths have not been identified. Atmospheric relief on the secondary side is necessary in order achieve a controlled cool down rate. Failure to modulate the SG 2B ARV due to a loss of instrument air would cause the valve to fail closed, thereby isolating the secondary side. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFF 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1599 of 2430



1

.

Fire Area ID: Compliance Basis:	2-020 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR ID	U2-2-020-SEP-001		
VFDR	Q2B31L0001A:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. Fire induced control circuit damage could spuriously trip Pressurizer Group A, or prevent its operation. Failure to ensure availability of Pressurizer Group A Heaters could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-020-SEP-002		
VFDR	Q2B41P0001B:ON:OFF, RCP 2B - In order to support a natural circulation cool down, the Reactor Coolant Pumps must be tripped. Fire induced circuit damage could spuriously start the Reactor Coolant Pump 2B. Failure to ensure the Reactor Coolant Pumps are tripped challenges the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-020-SEP-003		
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Charging pump 2B (Aligned Train A) suffers fire induced circuit failure that would prevent remote tripping of the pump. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-020-SEP-004		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:09 Page: 1600 of 2430

Fire Area ID: Compliance Basis:	VFDF Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR	Q2N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric relief must be isolated on the secondary side initially. Spurious opening of the Atmospheric Relief Valve PV3371A could result from fire induced circuit failure. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-005	
VFDR	Q2N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric relief must be isolated on the secondary side initially. Spurious opening of the Atmospheric Relief Valve PV3371B could result from fire induced circuit failure. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-006	
VFDR	Q2N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Atmospheric relief must be isolated on the secondary side initially. Spurious opening of the Atmospheric Relief Valve PV3371C could result from fire induced circuit failure. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	. This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-007	

ς.

Fire Area ID: Compliance Basis:	2-020 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR	Q2N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - Since the TDAFW Pump is not credited in this fire area, spurious steam admission to the Pump could result in the pump spuriously starting, and feeding a non-credited steam generator. This could result in an overcooling condition. Fire induced control circuit damage to the steam admission valve HV3235A could result in the valve spuriously opening, thus admitting steam to the TDAFW Pump. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-008	
VFDR	Q2N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - Since the TDAFW Pump is not credited in this fire area, spurious steam admission to the Pump could result in the pump spuriously starting, and feeding a non-credited steam generator. This could result in an overcooling condition. Fire induced control circuit damage to the steam admission valve HV3235B could result in the valve spuriously opening, thus admitting steam to the TDAFW Pump. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-009	
VFDR	Q2R43E0001B:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2G - Spurious start of the charging pumps via spurious load sequencing is credil based on the cable failures in this fire area. A hot short on cable 1VBD5001C could result in a spurious charging pump 2B or 2C start. This could result in a overcharging condition and challenge the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NF 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-010	
Fire Safety Analysis Data M	Aanager (4.1) Farley Run: 08/18/2012 22:09 Page: 1602 of 2430	

Fire Area ID: Compliance Basis:	2-020 - Aux Building sis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach N2B21TR0410:AVAILABLE-TE420:AVAILABLE-TE420, RCS COLD LEG TEMPERATURE RECORDER TR-410 - Decay Heat removal via SG 2B is desire this Fire Area. RCS Temperature Indication at the control room (or local control center) is required in order to remove decay heat through the steam generat A loss of AC power to TE420 and TE423 (from panels 2A and 2B respectively) will prevent indication from being available at the control for RCS Loop 2 Hot Cold Leg Temperature. The Indicators are supplied from AC Panels 2A and 2B which both suffer power cable failures. These failures challenge the Decay H Removal Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
VFDR		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.	
VFDR ID	U2-2-020-SEP-011	
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater A, or prevent remote tripping of the load. Furthermore, a loss of power at panel 2B could occur, thereby preventing tripping ability. Failure to secure the Pressurizer Heater A could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-012	
VFDR	Q2B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 2B DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater B, or prevent remote tripping of the load. Furthermore, a loss of power at panel 2E could occur, thereby preventing tripping ability. Failure to secure the Pressurizer Heater B could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Safety Analysis Data Manager (4.1)



۸.







Fire Area ID: Compliance Basis:	2-020 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID U2-2-020-SEP-013		
VFDR	Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - The Pressurizer Power Relief Valve is required to cycle in order to de -pressurize the RCS System. A loss of the pressurizer control signal from PT445 could prevent re-closure of the valve once the auto-open feature has been actuated. PT445 suffers a loss of AC Power from Process Cabinet C and G in this fire area, and cannot be relied upon to remain non-spurious. An inability to cycle the Pressurizer Power Relief Valve challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition ·	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-014	
VFDR	Q2E13PT0952:AVAILABLE:AVAILABLE, CONTAINMENT PRESSURE TRANSMITTER PROTECTION CHANNEL III - A loss of AC power to the transmitter PT952 could initiate a spurious SIAS signal, through actuation of a spurious Containment Hi Pressure Signal. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, and possible actuation of the Safety Injection System, which is not credited for Inventory Makeup. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-015	
VFDR	Q2E21LT0112:AVAILABLE:AVAILABLE, VCT LEVEL TRANSMITTER - The Volume Control Tank Outlet Isolation valves must initially remain open to establish a charging lineup before suction is re-aligned to the RWST. A loss of power to the VCT level instruments could initiate a spurious swap over to the RWST. Panel 2A supplies AC power to LT115 and suffers power feed damage. Panel 2C supplies LT112, and suffers upstream power failure, and power cable failure. Furthermore, Process Cabinets C and G are unavailable to provide power to LT112. These failures would isolate the VCT Supply by closing the associated valves. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Area ID: Compliance Basis:	Aux Building VFDF NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions NFPA 805, Section 4.2.3 Deterministic Approach			
VFDR ID	U2-2-020-SEP-016			
VFDR	E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - Charging via the CVCS system is required to maintain RCS Inventory for makeup. Charging via Pump 2A ought after in this fire area. Fire induced circuit failure could also prevent operation of the pump remotely, or result in a spurious trip of the pump. Failure to ablish charging challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic uirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section .4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-020-SEP-017			
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Charging pump 2B (Aligned Train B) and 2C suffer a loss of control power and potential spurious sequencer start that would prevent remote tripping of the pump and/or potential spurious start of the pump due to fire induced circuit failure. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-020-SEP-018			
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. The Valve's modulating capability required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. Fire induced circuit failure could result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-020-SEP-019			
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:09 Page: 1605 of 243			

Fire Area ID: Compliance Basis:	2-020 - Aux Building Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR	N2C55NI0031A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31A - Source Range Instrumentation is required to monitor Reactivity Conditions. A loss of power to Panels 2A and 2B will prevent Source Range Detectors (Channel 1 and 2) from being available, due to power circuit failures. These instrument loops rely upon train A electrical power, which is not demonstrated to be available in this Fire Area. Failure to monitor subcritical conditions challenges the Reactivity Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-020-SEP-020	
VFDR	Q2N11PT0476:AVAILABLE:AVAILABLE, STEAM GENERATOR 2A DISCHARGE PRESSURE - A loss of AC power to the transmitter PT476 from loop power cabinet D and H could initiate a spurious SIAS signal. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, and possible actuation of the Safety Injection System, which is not credited for Inventory Makeup. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-021	
VFDR	Q2N11PT0496:AVAILABLE:AVAILABLE, STEAM GENERATOR 2C DISCHARGE PRESSURE - A loss of AC power to the transmitter PT496 from Process Cabinets D and H could initiate a spurious SIAS signal. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, and possible actuation of the Safety Injection System, which is not credited for Inventory Makeup. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	U2-2-020-SEP-022	

Fire Area ID: Compliance Basis:		
VFDR Q2N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - The Atmospheric Relief Valves are required to modulate in ord the atmosphere and facilitate the removal of decay heat. Decay Heat Removal via SG2B is desired in this fire area. Fire induced circuit fa ARV PV3371B to fail closed or spuriously open. Furthermore, This failure challenges the Decay Heat Removal Nuclear Safety Performan condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate f performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-023	
VFDR	Q2N23P0001A:OFF:ON/OFF, 2A MDAFW PUMP - The Motor Driven Auxiliary Feed water Pump 2A is required to supply the Steam Generators with High Pressure Feed water in order to remove Decay Heat Removal. Fire induced circuit failure of the pump could prevent its operation. Failure to ensure availability of the Aux Feed water Pump challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-020-SEP-024	
VFDR	Q2P17P0001C:STANDBY:ON, 2C COMPONENT COOLING WATER PUMP - Component Cooling Water (CCW) is required to support various systems, including CVCS. CCW is used to cool the High Head SI/Charging pumps. The CCW pumps circulate cooling water to support heat exchange and cooling of these components. CCW pumps 2C and 2B (Aligned Train A) suffer fire induced control circuit damage that could result in a failure to remotely operate the pumps and potentially spuriously trip them. Failure to establish CCW will directly impact the ability to support charging and pose a challenge to the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFP/ This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

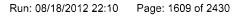


Fire Area ID: Compliance Basis:	2-021-U1 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		Fire Area Definition
Fire Zone ID 2229-U1	Description 2229 Switchgear Room		
2233-U1	2233 Switchgear Room	:	
		,	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:10 Page: 1608 of 2430

Fire Area ID: 2-021-U1 - A Compliance Basis: NFPA 805, S	k Building Switchgear Rooms ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump via Train A power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrit	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		· · ·
4.1 RCS Pressure Control - Pressure Transier	t Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		







	2-021-U1 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	Performance Goals	
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MDAFW and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.	Х 12	
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C level is monitored.	: • •	
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries – Service Wate	er Performance-based approach Train A service water is provided with two service water pumps in service recirculating to the pond or Train A service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Component Water	Cooling Train A component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled. Initiation of carbon dioxide suppression systems will not damage components needed for safe shutdown; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-021-U1 - Aux Building Switchgear Rooms Engineering Evaluations NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described,
	. The fire hereards and fire protection features on both sides of the herrier were described

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.



	21-U1 - Aux Building Switchgear Rooms PA 805, Section 4.2.4.2 Performance-Ba	sed Approach - Fire Risk E	Required Fire Protection Systems and Features
Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-104	Risk Criteria	Required to meet risk criteria.
Detection	2A-104	DID Criteria	Required to meet DID criteria.
Detection	2A-104 [Zone 2233]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-104 [Zone 2233]	Risk Criteria	Required to meet risk criteria.
Detection	2A-104 [Zone 2233]	DID Criteria	Required to meet DID criteria.
Gaseous Suppression	2A-28	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	2A-28 [Zone 2233]	EEEE/LA	Required to support a fire area boundary evaluation.
Gaseous Suppression	2A-28 [Zone 2233]	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	2A-30	EEEE/LA	Required to support a fire area boundary evaluation.
Gaseous Suppression	2A-30	Risk Criteria	Required to meet risk criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.

Fire Area ID: Compliance Basis:	2-021-U1 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-021-U1
Summary A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic req NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of c safety margins. The fire risk evaluation determined that with the installed detection/suppression systems, the applicable risk, defense-in-de margin criteria were satisfied.	
ΔCDF	8.85E-08
ΔLERF	3.04E-10
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	



Fire Area ID: Compliance Basis:	2-021-U1 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-2-021-SEP-001
VFDR Q1P16V0592:CLOSED:CLOSED, SW TO D/G 2B - Q1P16V0592 - SW to D/G 1B. The valve is normally closed, required closed to prevent or water system. Fire induced cable damage can cause spurious valve operation and prevent adequate service water support to the diesel gene challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

.

Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
2229-U2	2229 Switchgear Room	
2233-U2	2233 Switchgear Room	







Fire Area ID:2-021-U2 - AuCompliance Basis:NFPA 805, Se	x Building Switchgear Rooms action 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump via Train A power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	·
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups.	
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with performance-based approach aux spray} for pressure reduction and performance-based approach Pressurizer Heater Group A for pressure increase.	

:

Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Eva	luation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using T supplying Steam Generator 2B. Main feed is isolated to p cooldown.	
6 Process Monitoring	 Shutdown Margin - Shutdown margin is monitored by detector Ch 1/Ch 2. RCS Pressure - RCS pressure is narrow range Ch 1/Ch 2, RCS wide range pressure for Lo Level - Pressurizer level is monitored by PZR level Ch 1// Temperature - RCS Loop 2 temperature is monitored by RTDs. SG Pressure - Steam Generator 2A/2B/2C pre monitored. SG Level - Steam Generator 2A/2B level i 	monitored by PZR pop 3. 3. Pressurizer Ch 2. 4. RCS pop hot and cold leg essure is
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by of diesel generator ED and 600 V power is supplied by Train A distribution equip power and 120 VAC power is supplied by Train A equipm	ment. 3. 125 VDC
7.2 Vital Auxiliaries – Service W	ater Train A service water is provided with two service water p recirculating to the pond Oor Train A service water is pro- service water pump in service recirculating to the pond ar turbine building loads isolated.	vided with one
7.3 Vital Auxiliaries – Componer Water	nt Cooling Train A component cooling water is provided with non-es	sential loads isolated.
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A HVAC. Roor locations is provided with performance-based approach h corresponding to the service water train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled. Initiation of carbon dioxide suppression systems will not damage components needed for safe shutdown; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Rún: 08/18/2012 22:10 Page: 1617 of 2430



Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear Rooms Engineering Evaluation NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Engineering Evaluation		
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3		
Inactive	No		
Functionally Equivalent	Νο		
Adequate for the Hazard	Yes		
Summary	Purpose:		
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.		
	Bases for Acceptability:		

• The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

1

	-021-U2 - Aux Building Switchgear Rooms IFPA 805, Section 4.2.4.2 Performance-Ba		Required Fire Protection Systems and Features Fire Risk Evaluation with simplifying deterministic assumptions	
Required FP System(s)/Feature(s)	Description	Required By	Comments	
Detection	2A-104	Risk Criteria	Required to meet risk criteria.	
Detection	2A-104	DID Criteria	Required to meet DID criteria.	
Detection	2A-104 [2223]	EEEE/LA	Required to support a fire area boundary evaluation.	
Detection	2A-104 [2223]	Risk Criteria	Required to meet risk criteria.	
Detection	2A-104 [2223]	DID Criteria	Required to meet DID criteria.	
Gaseous Suppression	2A-28	Risk Criteria	Required to meet risk criteria.	
Gaseous Suppression	2A-28	DID Criteria	Required to meet DID criteria.	
Gaseous Suppression	2A-28 [Zone 2233]	EEEE/LA	Required to support a fire area boundary evaluation.	
Gaseous Suppression	2A-28 [Zone 2233]	Risk Criteria	Required to meet risk criteria.	
Gaseous Suppression	2A-28 [Zone 2233]	DID Criteria	Required to meet DID criteria.	
Gaseous Suppression	2A-29	Risk Criteria	Required to meet risk criteria.	
Gaseous Suppression	2A-29	DID Criteria	Required to meet DID criteria.	
Gaseous Suppression	2A-30	EEEE/LA	Required to support a fire area boundary evaluation.	
Gaseous Suppression	2A-30	Risk Criteria	Required to meet risk criteria.	
Gaseous Suppression	2A-30	DID Criteria	Required to meet DID criteria.	
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.	
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to me risk criteria.	
Modifications		Risk Criteria	Modification to wrap cable 2VYH2C05B, install interposing relay and fuse to protect cable 2VYDG15 J and to replace trip device in panel Q2R42B0001A, breaker LA13; Q2R42B0001B, breaker LB07.	







Attachment C

Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-021-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with specified recovery actions, modification(s), and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
∆ CDF	2.88E-07
∆ LERF	1.11E-08
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained."
Comments	

Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-2-021-ASSO-001	
VFDR	Q2R15A0006:ENERGIZED:ENERGIZED-EDG1-2A, 4160V SWITCHGEAR BUS 2F - AC power is required to support various safe shutdown components. The Diesel Generator 1-2A can supply Bus 2F, however a potential coordination issue arises due to the cited circuit failures. A fault on those cables concurrent with a loss of DC control power to the respective breakers could result in the DG output breaker tripping due to a lack of coordination. This failure challenges all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-021-ASSO-002	
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - Positive Control of the pressurizer Heaters is required in order to accommodate low pressure transients. A loss of power to the Load Center supplying the Pressurizer Heater Group 2A would prevent operation of the Heater. Load Center 2A suffers an associated circuit failure in this area. A potential loss of breaker coordination may exist if control power to a respective load breaker is lost to Breaker EA14, if the associated power cable 2VXEA14 P is also faulted. These failures could result in a potential trip of the upstream supply breaker due to a lack of coordination. Failure to achieve positive control of the pressurizer heater group challenges the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-021-BC-001	
VFDR	Q2E13PT0953:AVAILABLE:AVAILABLE, CONTAINMENT PRESSURE TRANSMITTER PROTECTION CHANNEL IV - This safe shutdown component req AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to transmitter PT953 could initiate a spurious SIAS signal. This will not happen until the Battery Endurance time has been exhausted. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, or spurious opening of the SI injection path. Failure establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from th deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NF 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	





Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U2-2-021-BC-002		
VFDR	Q2E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. Isolating the normal charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Normal Charging line supply from CVCS) fails open on a loss of control power to DC panel 2D, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the aux spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-021-BC-003		
VFDR	Q2E21V0245:CLOSED:OPEN/CLOSED, RCS PRESSURIZER AUX SPRAY - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. This valve is required to cycle in order to supply CVCS inventory to the pressurizer to de-pressurize via aux-spray, and the valve fails closed on a loss of power. An inability to cycle this valve due to a loss of power to DC panel 2D, would prevent de-pressurization of the RCS via aux-spray. Failure to ensure cycling capability of this valve challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-021-BC-004		
VFDR	Q2N11PT0475:AVAILABLE:AVAILABLE, STEAM GENERATOR 2A DISCHARGE PRESSURE - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT475 could initiate a spurious SIAS signal. This will not happen until the Battery Endurance time has been exhausted. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, or spurious opening of the SI injection path. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		

Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluatio applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-021-BC-005	
VFDR	Q2N11PT0485:AVAILABLE:AVAILABLE, STEAM GENERATOR 2B DISCHARGE PRESSURE - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT485 could initiate a spurious SIAS signal. This will not happen until the Battery Endurance time has been exhausted. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108, or spurious opening of the SI injection path. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-021-HVAC-001	
VFDR	Q2R42B0001B:ENERGIZED:ENERGIZED-BC2B, 125V DC BUS 2B - This component, 125V DC Bus 2B (Train B Battery Charger Room Cooler), requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component challenges various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recoractions(s) are required to meet applicable risk criteria.	
VFDR ID	U2-2-021-HVAC-002	
VFDR	Q2R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 2B - This component, 125V DC Battery 2B (Train B Battery Room Exhaust Fan), requires HVAC support to remain functional. Failure to provide HVAC support challenges various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805. Section 4.2.4.	



Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U2-2-021-IA-001		
VFDR	Q2E21V0243:CLOSED:CLOSED, RCS ALTERNATE CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the alternate charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Alternate Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-021-IA-002		
VFDR	Q2E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the normal charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Normal Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the aux spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-021-IA-003		

1

Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear F NFPA 805, Section 4.2.4.2 Performar	Rooms nce-Based Approach - Fire Risk Evaluation with simplify	ying deterministic assumptions	VFDR
VFDR Q2E21V0245:CLOSED:OPEN/CLOSED, RCS PRESSURIZER AUX SPRAY - This component requires instrument air to perform its credited fur Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. This valve is required to cycle in orc CVCS inventory to the pressurizer to de-pressurize via aux-spray, and the valve fails closed on a loss of instrument air. An inability to cycle this loss of instrument air would prevent de-pressurization of the RCS via aux-spray. Failure to ensure cycling capability of this valve challenges the Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Se NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			n order to supply this valve due to a the RCS	
Disposition		pliance using the performance-based approach of NFP safety margin criteria were satisfied without further act		rmined that
VFDR ID	U2-2-021-IA-004			
VFDR	Instrument air is assumed to be unav flow to be injected into the RCS syste of instrument air will result in this valv Nuclear Safety Performance Criteria.	D:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 permits normal charging RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A loss in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control ce Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a of or compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition		pliance using the performance-based approach of NFP safety margin criteria were satisfied without further act		rmined that
VFDR ID	U2-2-021-IA-005			
VFDR.	is assumed to be unavailable in this fi normally closed, required to cycle to c steam generator pressure, and pose a	ED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument air ilable in this fire area because air loss paths have not been identified. Q2N11PV3371B - Main Steam Atmos Relief. The valve is d to cycle to control steam generator pressure. Fire induced damage from instrument air components failure prevent the ability to control ire, and pose a challenge to the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from ements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of 4.		
Disposition		was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that , defense-in-depth, and safety margin criteria were satisfied without further action.		rmined that
VFDR ID	U2-2-021-SEP-001			
Fire Safety Analysis Data Mar	nager (4.1)	Farley	Run: 08/18/2012 22:10	Page: 1625 of 2430
	~ ` '			

1



1

Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2N12HV3234B:OPEN:OPEN/CLOSED, TDAFWP STEAM SUPPLY WARM-UP ISOLATION - The TDAFW Pump is not credited for use in this fire area. Valve HV3234B provides a bypass path for steam to start the TDAFW Pump. Fire induced control circuit damage to the cited cable could spuriously open this valve. Steam admission could occur to the TDAFW Pump through this valve, and thus spuriously start the pump. Once started, the TDAFW pump could then supply a non-credited Steam Generator and result in an overcooling condition. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-021-SEP-002
VFDR	Q2N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - Q2N12V0001A - TDAFP Steam Supply Isolation Valve HV3235A. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage may prevent the ability to turn pump off, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-021-SEP-003
VFDR	Q2N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - Q1N12V0001B - TDAFP Steam Supply Isolation Valve HV3235B. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage may prevent the ability to turn pump off, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-021-SEP-004

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-021-U2 - Aux Building Switchgear Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 2B DISTRIBUTION PANEL - The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. Fire induced control circuit damage could spuriously actuate Pressurizer Heater 2B, or prevent remote tripping of the load. Furthermore a loss of DC control power at panel 2E could prevent tripping of the load. Failure to secure the Pressurizer Heater Group B could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using t performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-021-SEP-005	
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - An inability to trip a non credited charging pump could result in an overcharging condition, thereby impairing the ability to control the overall cool-down rate. Charging pump 2B (Aligned Train B) and 2C suffers a loss of control power that would preverent tripping of the pump and/or potential spurious start of the pump due to fire induced circuit failure. In addition spurious sequencer 2G operation could spuriously start these pumps. Failure to secure B train charging challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-021-SEP-006	
VFDR	Q2C11E0004A:CLOSED:OPEN, REACTOR TRIP SWITCHGEAR 1 - The Reactor Trip Switchgear is required to remain available in order to provide operator capability to remotely insert the control rods in the reactor vessel to initiate plant shutdown. Fire induced circuit failure that disables both the shunt and under voltage trips, could bypass operator control of the circuitry for both channels of switchgear (1 and 2) thus preventing reactor trip. Failure to initiate Reactor Scram challenges the Reactivity Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	



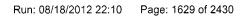


Fire Area ID: Compliance Basis:	2-023-U1 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions				Fire Area Definition
Fire Zone ID 2235-U1	Description 2235 Switchgear Room	• !			
			• 		

Fire Safety Analysis Data Manager (4.1)

	ux Building Switchgear Room ection 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	Performance Goals deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room OR Plant shutdown is performed from the Hot Shutdown Panel.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room OR Reactor is manually tripped from the Control Room prior to Control Room evacuation.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump via Train A power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.	
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	· · · · · · · · · · · · · · · · · · ·
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	· ·
4.1 RCS Pressure Control - Pressure Transien	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	

(





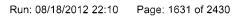
1

Fire Area ID: Compliance Basis:		x Building Switchgear Room ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal		Method of Accomplishment	Comments	
4.2 RCS Pressure Control - Posi Control	tive Pressure	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	2 1	
5 Decay Heat Removal		Decay heat removal during HSD is accomplished using Train A MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.	.t	
6 Process Monitoring		1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored.		
7.1 Vital Auxiliaries – Electrical		1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries – Service Wa	ater	Perfoirmance-based aproach Train A service water is provided with two service water pumps in service recirculating to the pond or Train A service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Componer Water	t Cooling	Train A component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVAC		Control Room cooling is provided by Train A HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Area ID:	2-023-U1 - Aux Building Switchgear Room	Performance Goals
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.





Fire Area ID: Compliance Basis:	2-023-U1 - Aux Building Switchgear Room Engineering Evaluations NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Engineering Evaluations
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

	2-023-U1 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with s		Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions
Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-31	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-31	Risk Criteria	Required to meet risk criteria.
Detection	2A-31	DID Criteria	Required to meet DID criteria.
Gaseous Suppression	2A-31	EEEE/LA	Required to support a fire area boundary evaluation.
Gaseous Suppression	2A-31	Risk Criteria	Required to meet risk criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:10 Page: 1633 of 2430





• 7



Fire Area ID: Compliance Basis:	2-023-U1 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-023-U1
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	7.87E-10
Δ LERF	1.42E-12
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

.

Fire Area ID: Compliance Basis:	2-023-U1 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U1-2-023-SEP-001
VFDR	Q1P16V0592:CLOSED:CLOSED, SW TO D/G 2B - Q1P16V0592 - SW to D/G 1B. The valve is normally closed, required closed to prevent crosstie of service water system. Fire induced cable damage can cause spurious valve operation and prevent adequate service water support to the diesel generator, and a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

.

Fire Area ID: Compliance Basis:	2-023-U2 - Aux Building NFPA 805, Section 4.2.	Fire Area Definition	
Fire Zone ID 2235-U2			
		、 、	

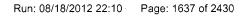
•

t

	-U2 - Aux Building Switchgear Room A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalua	Performance G ation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcri Conditions	tical Subcritical conditions are maintained by isolating the VCT to dilution and by charging borated water from the RWST using pump or swing charging pump via Train A power.	
3.1 RCS Inventory Control - RCS Make	up RCS inventory is controlled using Train A charging pump or pump via Train A power aligned to the RWST.	swing charging
3.2 RCS Inventory Control - Isolate Lea Paths	kage Normal letdown is isolated using orifice isolation valves. Exc isolated using one or more excess letdown or containment is PZR PORV leakage paths are isolated using Train A PORV PORV. The RCS to RHR high/low pressure interface is isola Train A/Train B RHR inboard isolation valve and Train A/Tra outboard isolation valve.	solation valves. ′ and Train B ated using the
3.3 RCS Inventory Control - RCP Seal	ntegrity Maintain RCP Seal Integrity - RCP seal integrity is maintain RCPs, maintaining normal seal injection using Train A charging pump via Train A power, and preventing failure of t barriers. RCP seal injection paths are secured by isolating the discharge seal injection lines. CCW to RCP thermal barriers containment isolation valves or the CCW to RCP thermal bar valve.	ging pump or swing the RCP thermal he supply and s are isolated using
4.1 RCS Pressure Control - Pressure T	ransient Undesired depressurization due to inadvertent spray is prev ensuring auxiliary spray valve remains closed and the Loop RCPs are shut off. Undesired pressure increase is prevente based approach deenergizing all pressurizer heater groups.	o 1 and Loop 2 ed by performance-
4.2 RCS Pressure Control - Positive Pr Control	Positive control of RCS pressure is accomplished with perfo approach Train A PORV or aux spray} for pressure reduction Heater Group A for pressure increase.	
		·

Fire Safety Analysis Data Manager (4.1)

2





	23-U2 - Aux Building Switchgear Room PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifyin	- Aux Building Switchgear Room , Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MDAFW pump supplying Steam Generator 2B. Main feed is isolated to prevent uncontrolled cooldown.		
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2, RCS wide range pressure for Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2. 4. RCS Temperature - RCS Loop 2 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B level is monitored.		
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 2A, diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Train A distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A equipment.		:
7.2 Vital Auxiliaries – Service Water	Train A service water is provided with two service water pumps in service recirculating to the pond or Train A service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Component Coc Water	ling Train A component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A HVAC. Room cooling at essential locations is provided with performance-based approach HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables outside of the area of fire suppression activity. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-023-U2 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Engineering Evaluations	
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3		
Inactive	No		
Functionally Equivalent	No		
Adequate for the Hazard	Yes		
Summary	Purpose:		
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.		
	Bases for Acceptability:		
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, 		
	 The construction of the boundary and the potential issue with the element in question was described, 		
	. The fire betterde and fire protection features on both sides of the berrier wars departied		

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

...



	2-023-U2 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk E		Required Fire Protection Systems and Feature	
Required FP System(s)/Feature(s)	Description	Required By	Comments	
Detection	2A-31	EEEE/LA	Required to support a fire area boundary evaluation.	
Detection	2A-31	Risk Criteria	Required to meet risk criteria.	
Detection	2A-31	DID Criteria	Required to meet DID criteria.	
Gaseous Suppression	2A-31	EEEE/LA	Required to support a fire area boundary evaluation.	
Gaseous Suppression	2A-31	Risk Criteria	Required to meet risk criteria.	
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.	
Modifications		Risk Criteria	Modification to replace trip device in panel Q2R42B0001A, breaker LA13; Q2R42B0001B, breakers LB07, LB14.	

Fire Area ID: Compliance Basis:	2-023-U2 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-023-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection/suppression systems and modification(s), the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	1.66E-08
ΔLERF	2.17E-10
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Area ID: Compliance Basis:	2-023-U2 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-023-ASSO-001
VFDR	Q2R16B0002:ENERGIZED:ENERGIZED-LC2D, 600V LOAD CENTER 2A NORMAL-EMERGENCY - Positive Control of the pressurizer Heaters is required in order to accommodate low pressure transients. A loss of power to the Load Center supplying the Pressurizer Heater Group 2A could prevent operation of the Heater. Load Center 2A suffers an associated circuit failure in this area. A potential loss of breaker coordination may exist if control power to a respective load breaker is lost to Breaker EA14, if the associated power cable 2VXEA14 P is also faulted. These failures could result in a potential trip of the upstream supply breaker due to a lack of coordination. Failure to achieve positive control of the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-023-BC-001
VFDR	Q2B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 2B DISTRIBUTION PANEL - This safe shutdown component requires AC or DC power to perform it's safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. The Pressurizer Heaters are required to increase RCS Pressure by heating Pressurizer Inventory. In order to establish pressure control, the Pressurizer heaters are required off. A loss of control power from panel 2E could prevent remote tripping of the load. Failure to secure the Pressurizer Heater Group B could challenge the RCS Pressure Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-023-BC-002
VFDR	Q2E13PT0952:AVAILABLE:AVAILABLE, CONTAINMENT PRESSURE TRANSMITTER PROTECTION CHANNEL III - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT952 could initiate a spurious SIAS signal. This will not happen until the Battery Endurance time has been exhausted. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-023-U2 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-023-BC-003
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. Charging is required in order to establish RCS Inventory Makeup. A loss of DC control power from Panel 2F to charging pump B could prevent tripping of the pump resulting in an overcharging condition. This failure challenges the RCS Inventory Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-023-BC-004
VFDR	Q2E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. Isolating the normal charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Normal Charging line supply from CVCS) fails open on a loss of control power to DC panel 2D, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the aux spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-023-BC-005

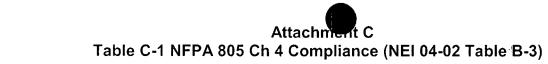
Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-023-U2 - Aux Building Switchgear Room VF NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	DRs
VFDR	Q2E21V0245:CLOSED:OPEN/CLOSED, RCS PRESSURIZER AUX SPRAY - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. This valve is required to cycle in order to supply CVCS inventory to the pressurizer to de-pressurize via aux-spray, and the valve fails closed on a loss of instrument air. An inability to cycle this valve due to a loss of power to DC panel 2D, would prevent de-pressurization of the RCS via aux-spray. Failure to ensure cycling capability of this valve challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	0 C
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-023-BC-006	
VFDR	Q2N11PT0475:AVAILABLE:AVAILABLE, STEAM GENERATOR 2A DISCHARGE PRESSURE - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT475 could initiate a spurious SIAS signal. This will not happen until the Battery Endurance time has been exhausted. A spurious SIAS Signal could result in spuriou isolation of the charging injection path, due to closure of Valves 8107 and 8108. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-023-BC-007	
VFDR	Q2N11PT0485:AVAILABLE:AVAILABLE, STEAM GENERATOR 2B DISCHARGE PRESSURE - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT485 could initiate a spurious SIAS signal. This will not happen until the Battery Endurance time has been exhausted. A spurious SIAS Signal could result in spuriou isolation of the charging injection path, due to closure of Valves 8107 and 8108. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Area ID: Compliance Basis:	2-023-U2 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions					
VFDR ID	U2-2-023-BC-008					
VFDR	Q2N11PT0495:AVAILABLE:AVAILABLE, STEAM GENERATOR 2C DISCHARGE PRESSURE - This safe shutdown component requires AC or DC power to perform its safe shutdown function. Ultimately Battery 2B supplies the DC bus that provides power to the component (Either through an inverter in the case of Vital AC power, or 125V DC control power). The battery charger(s) to this bus is not available in this Fire Area. A loss of AC power to the transmitter PT495 could initiate a spurious SIAS signal. This will not happen until the Battery Endurance time has been exhausted. A spurious SIAS Signal could result in spurious isolation of the charging injection path, due to closure of Valves 8107 and 8108. Failure to establish a charging path challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.					
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.					
VFDR ID	U2-2-023-HVAC-001					
VFDR	Q2R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 2B - This component, Battery 2B (Train B Battery Room Exhaust Fan), requires HVAC support to remain functional. Failure to provide HVAC support to this electrical component challenges various Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.					
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).					
VFDR ID	U2-2-023-IA-001					
VFDR	Q2E21V0243:CLOSED:CLOSED, RCS ALTERNATE CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the alternate charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Alternate Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.					
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.					

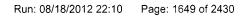
Fire Area ID: Compliance Basis:	2-023-U2 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions				
VFDR ID	U2-2-023-IA-002				
VFDR	Q2E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the normal charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Normal Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the aux spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-023-IA-003				
VFDR	Q2E21V0245:CLOSED:OPEN/CLOSED, RCS PRESSURIZER AUX SPRAY - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Isolating the normal charging line is necessary in order to obtain a significant pressure gradient in order to de-pressurize the RCS via aux-spray. This valve (the Normal Charging line supply from CVCS) fails open on a loss of instrument air, and hence the necessary pressure gradient will not be sufficient to supply the pressurizer through the aux spray line. Failure to de-pressurize via aux spray challenges the RCS Pressure/Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-023-IA-004				
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Flow control Valve V0347 permits normal charging flow to be injected into the RCS system. Instrument air is required to control the flow and thus charging inventory that is injected into the RCS Cold Legs. A loss of instrument air could result in this valve failing in the open position. Failure to throttle flow to the RCS system challenges the RCS Inventory/Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				

Fire Area ID: Compliance Basis:	2-023-U2 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDR
VFDR ID	U2-2-023-IA-005	
VFDR	Q2N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instr is assumed to be unavailable in this fire area because air loss paths have not been identified. Atmospheric relief on the secondary side is necessary in achieve a controlled cool down rate. Failure to modulate the SG 2B ARV due to a loss of instrument air would cause the valve to fail closed, thereby is the secondary side. This failure challenges the Decay Heat Removal Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of 805, Section 4.2.4.	n order to solating the
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	t
VFDR ID	U2-2-023-SEP-001	
VFDR	Q2N12HV3234B:OPEN:OPEN/CLOSED, TDAFWP STEAM SUPPLY WARM-UP ISOLATION - The TDAFW Pump is not credited for use in this fire ar HV3234B provides a bypass path for steam to start the TDAFW Pump. Fire induced control circuit damage to the cited cable could spuriously open this Steam admission could occur to the TDAFW Pump through this valve, and thus spuriously start the pump. Once started, the TDAFW pump could then non-credited Steam Generator and result in an overcooling condition. This condition represents a variance from the deterministic requirements of Section of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	is valve. I supply a
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	t
VFDR ID	U2-2-023-SEP-002	
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - Spurious start of the charging pump due to sequencer failure is credible. Fire induced of failure could simulate a load shed/sequence scenario and start a non-credited charging pump. This could lead to an overcharging condition, and challe RCS Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	enge the
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	t
VFDR ID	U2-2-023-SEP-003	
Fire Safety Analysis Data N	lanager (4.1) Farley Run: 08/18/2012 22:10 Page: 16	647 of 2430



Fire Area ID: Compliance Basis:	2-023-U2 - Aux Building Switchgear Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions				
VFDR	Q2C11E0004A:CLOSED:OPEN, REACTOR TRIP SWITCHGEAR 1 - The Reactor Trip Switchgear is required to remain available in order to provide operator capability to remotely insert the control rods in the reactor vessel to initiate plant shutdown. Fire induced circuit failure that disables both the shunt and under voltage trips, could bypass operator control of the circuitry for both channels of switchgear (1 and 2) thus preventing reactor trip. Failure to initiate Reactor Scram challenges the Reactivity Control Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				

Fire Area ID: Compliance Basis:	2-030-U1 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID 2249-U1 2252-U1	Description 2249 Cable Chase 2252 Cable Chase	



í

	Building Cable Chase, Rooms 2249 & 2252 tion 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	1
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump via Train A power.	
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.	
Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	ι.
	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.	
Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	

	- Aux Building Cable Chase, Rooms 2249 & 2252 5, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	Performance Goals	
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.		
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored.		
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries – Service Water	Performance-based approach Train A service water is provided with two service water pumps in service recirculating to the pond or Train A service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Component Cooling Water	Train A component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.	· · ·	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.





Fire Area ID: Compliance Basis:	2-030-U1 - Aux Building Cable Chase, Rooms 2249 & 2252 Engineering Evaluation with simplifying deterministic assumptions Engineering Evaluation with simplifying deterministic assumptions				
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3				
Inactive	No				
Functionally Equivalent	No				
Adequate for the Hazard	Yes				
Summary	Purpose:				
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, a such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a d rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.				
	Bases for Acceptability:				
	The fire areas, fire zones and rooms on both sides of the barrier were identified,				
	 The construction of the boundary and the potential issue with the element in question was described, 				

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

		Required Fire Protection Systems and Features Evaluation with simplifying deterministic assumptions		
Description	Required By	Comments		
2A-60 [2249,2252]	EEEE/LA	Required to support a fire area boundary evaluation.		
2A-60 [2249,2252]	Risk Criteria	Required to meet risk criteria.		
2A-60 [2249,2252]	DID Criteria	Required to meet DID criteria.		
2A-60 [2249,2252]	EEEE/LA	Required to support a fire area boundary evaluation.		
Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.		
F	FPA 805, Section 4.2.4.2 Performance-Ba Description 2A-60 [2249,2252] 2A-60 [2249,2252] 2A-60 [2249,2252] 2A-60 [2249,2252]	2A-60 [2249,2252] EEEE/LA 2A-60 [2249,2252] Risk Criteria 2A-60 [2249,2252] DID Criteria 2A-60 [2249,2252] EEEE/LA		

Fire Safety Analysis Data Manager (4.1)



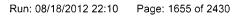


Fire Area ID: Compliance Basis:	2-030-U1 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-030-U1
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	1.95E-08
ΔLERF	6.67E-11
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

-

.

Fire Area ID: Compliance Basis:	2-030-U1 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions				
VFDR ID	U1-2-030-SEP-001				
VFDR	Q1P16V0592:CLOSED:CLOSED, SW TO D/G 2B - Q1P16V0592 - SW to D/G 2B. The valve is normally closed, required closed to prevent crosstie water system. Fire induced cable damage can cause spurious valve operation and prevent adequate service water support to the diesel generator, a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 o This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	evaluation determined that			



Fire Area ID: Compliance Basis:	2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions					Fire Area Definition
Fire Zone ID 2249-U2 2252-U2	Description 2249 Cable Chase 2252 Cable Chase					
			ţ	;		
				d.		
		·				

	x Building Cable Chase, Rooms 2249 & 2252 ection 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump via Train A power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	р	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with performance-based approach Train A PORV for pressure reduction and Pressurizer Heater Group A for pressure increase.		

.

Fire Area ID: Compliance Basis:	2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation v	/ith simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A M supplying Steam Generator 2A. Main feed is isolated to prevent u cooldown.	
6 Process Monitoring	 Shutdown Margin - Shutdown margin is monitored by source r detector Ch 1/Ch 2. RCS Pressure - RCS pressure is monitor narrow range Ch 1/Ch 2, RCS wide range pressure for Loop 3. Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2. Temperature - RCS Loop 1/Loop 2 temperature is monitored by Ic cold leg RTDs. SG Level - Steam Generator 2A/2B/2C level is monitored. 	ed by PZR . Pressurizer RCS pop hot and essure is
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 2A/SUT generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by distribution equipment. 3. 125 VDC power and 120 VAC power i Train A equipment.	Train A
7.2 Vital Auxiliaries – Service Wa	ter Train A service water is provided with two service water pumps in recirculating to the pond or Train A service water is provided with water pump in service recirculating to the pond and non-essential building loads isolated.	one service
7.3 Vital Auxiliaries – Componen Water	Cooling Train A component cooling water is provided with non-essential lo	pads isolated.
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A HVAC. Room coolin locations is provided with HVAC equipment corresponding to the train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

...



Attach Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID:2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252Compliance Basis:NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simpli		Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions		
Required FP System(s)/Fea	ature(s)	Description	Required By	Comments
Detection		2A-60 [2249,2252]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection		2A-60 [2249,2252]	Risk Criteria	Required to meet risk criteria.
Detection		2A-60 [2249,2252]	DID Criteria	Required to meet DID criteria.

Water Suppression	2A-60 [2249,2252]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-60 [2249,2252]	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to meet risk criteria.
Modifications		Risk Criteria	Modification to replace trip device in panel Q2R42B0001B, breaker LB07.

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252 Fire Risk Evaluation with simplifying deterministic assumptions Fire Risk Evaluation
Title	FRE for Fire Area 2-030-U2
Summary A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirement NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense safety margins. The fire risk evaluation determined that with the specified recovery actions, modification(s), and the installed detection/suppression applicable risk, defense-in-depth, and safety margin criteria were satisfied.	
Δ CDF	8.85E-08
ΔLERF	1.24E-09
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Fire Safety Analysis Data Manager (4.1)





Fire Area ID: Compliance Basis:	2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-030-IA-001
VFDR	Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q1B31V0053 - Pressurizer PORV. The valve is normally closed, required to cycle to provide positive pressure control. Fire induced damage to instrument air components may result in spuriously closing the valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.
VFDR ID	U2-2-030-IA-002
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. The valve is normally modulated, required modulated to provide makeup. Fire induced instrument air failures can prevent makeup, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-IA-003
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2N11PV3371C - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components failure prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-030-IA-004
VFDR	Q2N23HV3228B:OPEN:THROTTLED TDAFW SUPPLY TO STEAM GENERATOR 2B - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2N23HV3228B - TDAFW Supply to Steam Generator 1B. The valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced damage from instrument air component failures will spuriously open valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-IA-005
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1C - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2N23HV3228C - TDAFW Supply to Steam Generator 1C. The valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced damage from instrument air component failures will spuriously open valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-SEP-001
VFDR	Q2B31L0001B:ON/OFF;ON/OFF, PRESSURIZER HEATER GROUP 2B DISTRIBUTION PANEL - Q2B31L0001B - Pressurizer Heater Group 2B Distribution Panel, Q2R41L0001E - 125Vdc Distribution Panel 2E. The heater is normally available, required off and panel normally energized, required energized to prevent pressure transient. Fire induced damage due to cascading power failures result in failure prevent heater operation, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.







,

Attachment C Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-030-SEP-002
VFDR	Q2R41L0001E:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 2E - Q2B31L0001B - Pressurizer Heater Group 2B Distribution Panel, Q2R41L0001E - 125Vdc Distribution Panel 2E. The heater is normally available, required off and panel normally energized, required energized to prevent pressure transient. Fire induced damage due to cascading power failures result in failure prevent heater operation, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-SEP-003
VFDR	N2B31PT0445:AVAILABLE:AVAILABLE, SAFETY INJECTION PRESSURIZER TANK PRESSURE TRANSMITTER - Q2B31V0053 - Pressurizer PORV; N2B31PT0455 - Pressurizer Pressure Transmitter Protection Channel 1. The valve is normally closed, required to cycle to provide positive RCS pressure control. The transmitter provides a control signal to open valve on high pressure. On loss of power to transmitter, it is assumed that a spurious signal is generated to open valve. Fire induced damage to transmitter power supply may result in spuriously opening the valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-SEP-004
VFDR	Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - Q2B31V0053 - Pressurizer PORV; N2B31PT0455 - Pressurizer Pressure Transmitter Protection Channel 1. The valve is normally closed, required to cycle to provide positive RCS pressure control. The transmitter provides a control signal to open valve on high pressure. On loss of power to transmitter, it is assumed that a spurious signal is generated to open valve. Fire induced damage to transmitter power supply may result in spuriously opening the valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

.

.~

Fire Area ID: Compliance Basis:	2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-030-SEP-007
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - Q2E21P0002A - 2A Charging Pump; Q1E21P0002B - 2B Charging Pump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required off, required off; sequencer normally available, required available, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-SEP-008
VFDR	Q2E21P0002C:ON:ON/OFF, 2C CHARGING PUMP - Q2E21P0002A - 2A Charging Pump; Q1E21P0002B - 2B Charging Pump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required off, required off; sequencer normally available, required available, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-SEP-009
VFDR	Q2R41L0001B:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 2B - Q2E21P0002A - 2A Charging Pump; Q1E21P0002B - 2B Charging Pump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required off, required off; sequencer normally available, required available, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-SEP-010

Fire Safety Analysis Data Manager (4.1)

.

Run: 08/18/2012 22:10 Page: 1665 of 2430

Fire Area ID: Compliance Basis:	2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2R43E0001B:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2G - Q2E21P0002A - 2A Charging Pump; Q1E21P0002B - 2B Charging Pump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required off, required off; sequencer normally available, required available, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-SEP-011
VFDR	Q2E21V0258:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q2E21V0258 - Charging Pumps to Regen HX. The valve is normally open, required to open to maintain RCS inventory. Fire induced spurious SIAS signal generated once the battery is depleted may close the valve preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-SEP-012
VFDR	Q2E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q2E21V0257 - Charging Pumps to Regen HX. The valve is normally open, required to open to maintain RCS inventory. Fire induced spurious SIAS signal generated once the battery is depleted may close the valve preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-SEP-013
	02-2-030-3EF-013

.

.

Fire Area ID: Compliance Basis:	2-030-U2 - Aux Building Cable Chase, Rooms 2249 & 2252 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2E11P0001A:OFF:ON/OFF, 2A RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001A - Sequencer Bus 2F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal and / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-030-SEP-014
VFDR	Q2E11P0001B:OFF:ON/OFF, 2B RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001A - Sequencer Bus 2F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal and / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.



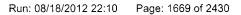




Fire Area ID: Compliance Basis:	2-031-U1 - Aux Building Cable C NFPA 805, Section 4.2.4.2 Perfo	hase, Rooms 2250 & 2251 Irmance-Based Approach - Fire Risk Evaluation with	simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID 2250-U1 2251-U1	Description 2250 Cable Chase 2251 Cable Chase			
			I	
			1	
			· ·	
		· · · · · · · · · · · · · · · · · · ·		
Fire Safety Analysis Data	Manager (4.1)	Farley	Run: 08/18/2012 2	22:10 Page: 1668 of 2430

Fire Area ID:2-0Compliance Basis:NF	31-U1 - Aux Building Cable Chase, Rooms 2250 & 2251 PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluati	Performance Goa
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room OR Plan performed from the Hot Shutdown Panel.	t shutdown is
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room OR React tripped from the Control Room prior to Control Room evacuat	
2.2 Reactivity Control - Maintain Suba Conditions	critical Subcritical conditions are maintained by isolating the VCT to dilution and by charging borated water from the RWST using pump or swing charging pump via Train B power.	prevent boron Train B charging
3.1 RCS Inventory Control - RCS Ma	keup RCS inventory is controlled using Train B charging pump or s pump via Train B power aligned to the RWST.	wing charging
3.2 RCS Inventory Control - Isolate L Paths	eakage Normal letdown is isolated using orifice isolation valves, a letd valve, or a letdown path containment isolation valve. Excess l isolated using one or more excess letdown or containment iso PZR PORV leakage paths are isolated using Train A PORV a PORV. The RCS to RHR high/low pressure interface is isolated Train A/Train B RHR inboard isolation valve and Train A/Train outboard isolation valve.	etdown is olation valves. Ind Train B ed using the
3.3 RCS Inventory Control - RCP Sea	al Integrity Maintain RCP Seal Integrity - RCP seal integrity is maintained RCPs, maintaining normal seal injection using Train B chargin charging pump via Train B power, and preventing failure of th barriers. RCP seal injection paths are secured by isolating the discharge seal injection lines. CCW to RCP thermal barriers a containment isolation valves or the CCW to RCP thermal barr valve.	ng pump or swing e RCP thermal e supply and are isolated using
4.1 RCS Pressure Control - Pressure	Transient Undesired depressurization due to inadvertent spray is preve ensuring auxiliary spray valve remains closed and the Loop 7 RCPs are shut off. Undesired pressure increase is prevented all pressurizer heater groups.	1 and Loop 2

Fire Safety Analysis Data Manager (4.1)





1

	Aux Building Cable Chase, Rooms 2250 & 2251 Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		Performance Goals	
Performance Goal	Method of Accomplishment	Comments		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.	к ,		
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.			
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C level is monitored.			
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.			
7.2 Vital Auxiliaries – Service Water	Train B service water is provided with two service water pumps in service recirculating to the pond or Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine service building loads isolated.			
7.3 Vital Auxiliaries – Component Cooling Water	Train B component cooling water is provided with non-essential loads isolated.			
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.			

,

Fire Area ID:	2-031-U1 - Aux Building Cable Chase, Rooms 2250 & 2251	Performance Goals
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.









Fire Area ID: Compliance Basis:	2-031-U1 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3		
Inactive	No		
Functionally Equivalent	No		
Adequate for the Hazard	Yes		
Summary	Purpose:		
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.		
	Bases for Acceptability:		
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,		
	• The construction of the boundary and the potential issue with the element in question was described,		
	 The fire hazards and fire protection features on both sides of the barrier were described, 		
	 Elements with construction features equal to 3-hr boundaries were credited as such, 		

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

	31-U1 - Aux Building Cable Chas PA 805, Section 4.2.4.2 Performa		Required Fire Protection Systems and Features
Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-61	DID Criteria	Required to meet DID criteria.
Detection	2A-61 [2251]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-61 [2251]	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-61	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-61 [2251]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-61 [2251]	DID Criteria	Required to meet DID criteria.







.

Attachment C Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	2-031-U1 - Aux Building Cable Chase, Rooms 2250 & 2251 Fire Risk Evaluation with simplifying deterministic assumptions Fire Risk Evaluation	
Title	FRE for Fire Area 2-031-U1	
Summary A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministi NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance safety margins. The fire risk evaluation determined that with the installed detection/suppression systems, the applicable risk, defense- margin criteria were satisfied.		
∆ CDF	Epsilon	
∆ LERF	Epsilon	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection and suppression systems were identified as required for DID.	
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.	
Comments		

۰.

.

Fire Area ID: Compliance Basis:	2-031-U1 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U1-2-031-SEP-001		
VFDR	Q1R16B0508:ENERGIZED:ENERGIZED-U1, 600V LOAD CENTER 1R/2R - Q1R16B0508 - 600V Load Center 1R/2R. The load center is normally energized, required energized to support EDG 1-2A. Fire induced cable damage can disable the diesel generator to load onto Bus 1F and a challenge to all Nuclear Safet Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-2-031-SEP-002		
VFDR	Q1R17B0509:ENERGIZED:ENERGIZED-U1, MOTOR CONTROL CENTER 1S - Q1R17B0509 - Motor Control Center 1S. The MCC is normally energized, required energized to support EDG 1-2A. Fire induced cable damage can disable the diesel generator to load onto Bus 1F and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-2-031-SEP-003		
VFDR	Q1R43E0501A:AVAILABLE:AVAILABLE-SHED, SEQUENCER BUS 1H - Q1R43E0501A - Sequencer Bus 1H. The sequencer is normally available, required available to support service water to pond for HVAC support of Bus 1F. The loss of sequencer can disable service water support for diesel generator, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		

Run: 08/18/2012 22:10 Page: 1675 of 2430



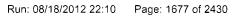


Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
2250-U2	2250 Cable Chase	
2251-U2	2251 Cable Chase	

	31-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Eva	luation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Subc Conditions	ritical Subcritical conditions are maintained by isolating the VCI dilution and by charging borated water from the RWST us pump or swing charging pump via Train B power.	
3.1 RCS Inventory Control - RCS Mak	RCS inventory is controlled using Train B charging pump pump via Train B power aligned to the RWST.	or swing charging
3.2 RCS Inventory Control - Isolate Le Paths	Normal letdown is isolated using orifice isolation valves. E isolated using one or more excess letdown or containmer PZR PORV leakage paths are isolated using Train A POF PORV. The RCS to RHR high/low pressure interface is is Train A/Train B RHR inboard isolation valve and Train A/ outboard isolation valve.	nt isolation valves. RV and Train B solated using the
3.3 RCS Inventory Control - RCP Sea	I Integrity Maintain RCP Seal Integrity - RCP seal integrity is mainta -based approach tripping all RCPs, maintaining normal se Train B charging pump or swing charging pump via Train preventing failure of the RCP thermal barriers. RCP seal secured by isolating the supply and discharge seal injecti RCP thermal barriers are isolated using containment isola CCW to RCP thermal barrier isolation valve.	eal injection using B power, and injection paths are on lines. CCW to
4.1 RCS Pressure Control - Pressure	Transient Undesired depressurization due to inadvertent spray is pr normal and auxiliary spray valves remain closed and the RCPs are performance-based approach shut off. Undesir is prevented by performance-based approach deenergizin heater groups.	Loop 1 and Loop 2 red pressure increase
4.2 RCS Pressure Control - Positive F Control	Pressure Positive control of RCS pressure is accomplished with pe appraoch Train B PORV for pressure reduction and Press B for pressure increase.	

Fire Safety Analysis Data Manager (4.1)

!



	031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	 Aux Building Cable Chase, Rooms 2250 & 2251 Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions 		
Performance Goal	Method of Accomplishment	Comments		
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train B MDAFW pump supplying Steam Generator 2C. Main feed is isolated to prevent uncontrolled cooldown.	;		
6 Process Monitoring	 Shutdown Margin - Performance-based approach shutdown margin is monitored. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 4. RCS Temperature - RCS Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B/2C level is monitored. 			
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by diesel generator EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train B equipment.			
7.2 Vital Auxiliaries – Service Water	Train B service water is provided with two service water pumps in service recirculating to the pond or Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.			
7.3 Vital Auxiliaries – Component Co Water	ooling Train B component cooling water is provided with non-essential loads isolated.			
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.			

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in the area and adjacent areas. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2 NFPA 805, Section 4.2.4.2 Performance-Based Approa	Engineering Evaluations			
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3				
Inactive	No	;			
Functionally Equivalent	No	· · · · · · · · · · · · · · · · · · ·			
Adequate for the Hazard	Yes				
Summary	Purpose:				
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.				
	Bases for Acceptability:				
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described, Elements with construction features equal to 3-hr boundaries were credited as such, 				
	• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.				

ŝ

;



1





	-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk E		Required Fire Protection Systems and Features Evaluation with simplifying deterministic assumptions	
Required FP System(s)/Feature(s)	Description	Required By	Comments	
Detection	2A-61	DID Criteria	Required to meet DID criteria.	
Detection	2A-61 [2251]	EEEE/LA	Required to support a fire area boundary evaluation.	
Detection	2A-61 [2251]	DID Criteria	Required to meet DID criteria.	
Water Suppression	2A-61	DID Criteria	Required to meet DID criteria.	
Water Suppression	2A-61 [2251]	EEEE/LA	Required to support a fire area boundary evaluation.	
Water Suppression	2A-61 [2251]	DID Criteria	Required to meet DID criteria.	
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to mee risk criteria.	
Modifications		Risk Criteria	Modification to replace trip device in panel Q2R42B0001A, breaker LA13.	

ş

٤...

Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 Fire Risk Evaluation with simplifying deterministic assumptions Fire Risk Evaluation	
Title	FRE for Fire Area 2-031-U2	
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the implementation of specified recovery actions, modification(s), and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.	
Δ CDF	1.41E-08	
Δ LERF	1.23E-10	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection and suppression systems were identified as required for DID.	
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.	
Comments		





Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-2-031-IA-001	
VFDR	Q2B31V0061:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2B31V0061 - Pressurizer PORV. The normally closed PORV valve required to cycle to control RCS pressure transient. Fire induced damage to instrument air components may result in spuriously closing of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.	
VFDR ID	U2-2-031-SEP-001	
VFDR	N2B21TR0410:AVAILABLE-TE410:AVAILABLE-TE410, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-031-SEP-002	
VFDR	N2B21TR0413:AVAILABLE-TE413:AVAILABLE-TE413, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N2B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced damage due to cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805: This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	

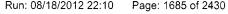
Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-031-SEP-003
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - Q2B31L0001A - Pressurizer Heater Group 2A Distribution Panel, Q2R41L0001B - 125Vdc Distribution Panel 2B. The heater is normally available, required off and panel normally energized, required energized to prevent pressure transient. Fire induced damage due to cascading power failures result in failure prevent heater operation, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-031-SEP-004
VFDR	Q2R41L0001B:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 2B - Q2B31L0001A - Pressurizer Heater Group 2A Distribution Panel, Q2R41L0001B - 125Vdc Distribution Panel 2B. The heater is normally available, required off and panel normally energized, required energized to prevent pressure transient. Fire induced damage due to cascading power failures result in failure prevent heater operation, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-031-SEP-005
VFDR	Q2E11V0025A:CLOSED:CLOSED, CONTAINMENT SUMP TO 2A RHR PUMP (INSIDE ENCAPSULATION) - Q2E11V0025A - Containment Sump to 2A RHR Pump; Q2E11V0026A - Containment Sump to 2A RHR Pump. The valves are normally closed, required closed to prevent loss of RWST to Sump. Fire induced damage to instruments cabinets power supplies generate SIAS after battery depletion or environmental failure can spuriously operate valves to cause failure of borated water to charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-031-SEP-006
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1683 of 2430

Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2E11V0026A:CLOSED:CLOSED, CONTAINMENT SUMP TO 2A RHR PUMP - Q2E11V0025A - Containment Sump to 2A RHR Pump; Q2E11V0026A - Containment Sump to 2A RHR Pump. The valves are normally closed, required closed to prevent loss of RWST to Sump. Fire induced damage to instruments cabinets power supplies generate SIAS after battery depletion or environmental failure can spuriously operate valves to cause failure of borated water to charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-031-SEP-010		
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - Q2E21P0002A - 2A Charging Pump; Q2E21P0002B - 2B Charging Pump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required off, required off; sequencer normally available, required available, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-031-SEP-011		
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - Q2E21P0002A - 2A Charging Pump; Q2E21P0002B - 2B Charging Pump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required off, required off; sequencer normally available, required available, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
	U2-2-031-SEP-012		

Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Ro NFPA 805, Section 4.2.4.2 Performance-	ooms 2250 & 2251 Based Approach - Fire Risk Evaluation with simpl	ifying deterministic assumptions	VFDR
VFDR	Q2R41L0001B - 125Vdc Distribution Pan normally available, required available, an Inventory and Pressure Control Nuclear S	el 2B; Q2R43E0001A - Sequencer Bus 2F. The p d panel normally energized, required energized to	P0002A - 2A Charging Pump; Q2E21P0002B - 2B ump is normally in Standby, required off, required turn off pump to prevent overcharging, and a chal ents a variance from the deterministic requirement wased approach of NFPA 805, Section 4.2.4.	off; sequencer llenge to the RCS
Disposition	This condition was evaluated for compliar applicable risk, defense-in-depth, and saf	nce using the performance-based approach of NF ety margin criteria were satisfied without further a	PA 805, Section 4.2.4. A fire risk evaluation deterr ction.	nined that
VFDR ID	U2-2-031-SEP-013		· · · · · · · · · · · · · · · · · · ·	
VFDR	Q2R41L0001B - 125Vdc Distribution Pan normally available, required available, and Inventory and Pressure Control Nuclear S	el 2B; Q2R43E0001A - Sequencer Bus 2F. The p d panel normally energized, required energized to	2A Charging Pump; Q2E21P0002B - 2B Charging ump is normally in Standby, required off, required turn off pump to prevent overcharging, and a chal ents a variance from the deterministic requirement ased approach of NFPA 805, Section 4.2.4.	off; sequencer llenge to the RCS
Disposition		nce using the performance-based approach of NF ety margin criteria were satisfied without further a	PA 805, Section 4.2.4. A fire risk evaluation deterr ction.	mined that
VFDR ID	U2-2-031-SEP-014			
VFDR	required closed to prevent charging pump to the Reactivity Control and RCS Invento	run out. Fire induced damage to instruments ger bry and Pressure Control Nuclear Safety Performa	6A - HHSI to RCS Cold Leg Isolation. The valve is herate SIAS signal to cause failure of charging pun ance Criteria. This condition represents a variance ate for compliance using the performance-based a	np, and a challenge from the
Disposition		nce using the performance-based approach of NF ety margin criteria were satisfied without further a	PA 805, Section 4.2.4. A fire risk evaluation deterr ction.	nined that
VFDR ID	U2-2-031-SEP-015			
Fire Safety Analysis Data N	<i>N</i> anager (4.1)	Farley	Run: 08/18/2012 22:10	Page: 1685 of 2430

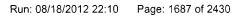






Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q2E21V0257 - Charging Pumps to Regen HX. The valve is normally open, required to open to maintain RCS inventory. Fire induced spurious SIAS signal generated once the battery is depleted may close the valve preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-031-SEP-016		
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Q2E21V0347 - Charging Flow Control Valve. The valve is normally throttled, required to throttle to maintain RCS inventory. Fire induced damage due to instrument air components and cascading power supply failure prevent ability to maintain reactivity and inventory control, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-031-SEP-017		
VFDR	Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced damage to instruments cabinets power supplies generate SIAS after battery depletion or environmental failure can spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-031-SEP-018		

Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced damage to instruments cabinets power supplies generate SIAS after battery depletion or environmental failure can spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-031-SEP-019		
VFDR	Q2E11P0001A:OFF:ON/OFF, 2A RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001A - Sequencer Bus 2F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal and / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-031-SEP-020		
VFDR	Q2E11P0001B:OFF:ON/OFF, 2B RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001A - Sequencer Bus 2F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal and / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
	U2-2-031-SEP-021		





•	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2R43E0001A:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2F - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001A - Sequencer Bus 2F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal and / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-031-SEP-022		
VFDR	N2C55NI0031A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31A - N2C55NI0031A - Source Range Count Rate Indicator NI- 31A and Q2R21L0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indicator NI-32A and Q2R21L0001B - 120V Vital AC Instrument Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U2-2-031-SEP-023		
VFDR	N2C55NI0032A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32A - N2C55NI0031A - Source Range Count Rate Indicator NI- 31A and Q2R21L0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indicator NI-32A and Q2R21L0001B - 120V Vital AC Instrument Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
	U2-2-031-SEP-024		

Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2R21L0001A:ENERGIZED:ENERGIZED, 120V VITAL AC INSTRUMENTATION PANEL 2A - N2C55NI0031A - Source Range Count Rate Indicator NI-31A and Q2R21L0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indicator NI-32A and Q2R21L0001B - 120V Vital AC Instrument Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-031-SEP-025	
VFDR	Q2R21L0001B:ENERGIZED:ENERGIZED, 120V VITAL AC INSTRUMENTATION PANEL 2B - N2C55NI0031A - Source Range Count Rate Indicator NI-31A and Q2R21L0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indicator NI-32A and Q2R21L0001B - 120V Vital AC Instrument Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-031-SEP-026	
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q2N11PV3371A - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-031-SEP-027	

Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - Q2N12V0001A - TDAFP Steam Supply Isolation Valve HV3235A. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to cascading power supply to instruments cabinets generate a spurious signal, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-031-SEP-028
VFDR	Q2N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - Q2N12V0001B - TDAFP Steam Supply Isolation Valve HV3235B. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to cascading power supply to instruments cabinets generate a spurious signal, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805; This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	! This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-031-SEP-029
VFDR	Q2N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2B - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply to Steam Generator 2B. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-031-SEP-030

Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply to Steam Generator 2B. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-031-SEP-031
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2C - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 2C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-031-SEP-032
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 2C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-031-SEP-033
Fire Safety Analysis Data I	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1691 of 2430

Fire Area ID: Compliance Basis:	2-031-U2 - Aux Building Cable Chase, Rooms 2250 & 2251 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	/FDRs
VFDR	Q2B41P0001A:ON:OFF, RCP 2A - Q2B41P0001A - RCP 2A. The pump is normally on, required off to prevent RCS inventory losses and meet thermo hydral concerns. Fire induced cable damage may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criter This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

•

Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID 2317 2334	Description 2317 Penetration Room Filtration System Equipment Room 2334 Electrical Penetration Room, Train B		· · · · · ·
	•	· ·	
		:	
		v	
		-	
		.	
-			



Compliance Basis: Unit 2: NFF	in B Electrical Pen Room & Filtration System A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sin A 805, Section 4.2.3 Deterministic Approach	nplifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.	•	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	 Unit 2: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump or swing charging pump via Train A power. 	:	
	 Unit 1: Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power. 		
3.1 RCS Inventory Control - RCS Makeup	 Unit 2: RCS inventory is controlled using Train A charging pump, or swing charging pump via Train A power aligned to the RWST. 		
	 Unit 1: RCS inventory is controlled using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power aligned to the RWST. 		
3.2 RCS Inventory Control - Isolate Leakage Paths	 Unit 2: Normal letdown is isolated using orifice isolation valves. Excess letdown is performance-based approach isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and performance-based approach Train B PORV or block valve. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR outboard isolation valve. 	,	
	 Unit 1: Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve. 		
3.3 RCS Inventory Control - RCP Seal Integri	 Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance-based approach tripping all RCPs. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve. 		
	 Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B 		
Fire Safety Analysis Data Manager (4.1)	Farley	Run: 08/18/2012 22:1	0 Page: 1694 of 2430

Compliance Basis: Unit 2: NFPA 8	3 Electrical Pen Room & Filtration System 305, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim 305, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
	power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressure Transient	 Unit 2: Undesired depressurization due to inadvertent spray is prevented by performance-based approach ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are performance-based approach shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups. 		
	 Unit 1: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 		
4.2 RCS Pressure Control - Positive Pressure Control	• Unit 2: Positive control of RCS pressure is accomplished with performance- based approach Train A PORV for pressure reduction and Pressurizer Heater Group A for pressure increase.		
	 Unit 1: Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase. 		
5 Decay Heat Removal	 Unit 2: Decay heat removal during HSD is accomplished using Train A MDAFW pump supplying Steam Generator 2A/2B. Main feed is isolated to prevent uncontrolled cooldown. 		
	 Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown. 		
6 Process Monitoring	• Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1, RCS wide range pressure for Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1. 4. RCS Temperature - Performance-based approach RCS Loop 1/Loop 2 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Steam Generator 2A/2B level is monitored.	;	
	• Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is		
Fire Safety Analysis Data Manager (4.1)	Farley	Run: 08/18/2012 22:1	0 Page: 1695 of 2430







Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with sim Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	plifying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
	monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure is monitored. 6. SG Level - Steam Generator 1A/1B/1C level is monitored.		
7.1 Vital Auxiliaries Electrical	• Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A. 2. 4.16 kV and 600 V power is supplied by Train A distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A equipment.	3	
	• Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries Service Water	 Unit 2: Train A service water is provided with two service water pumps in service recirculating to the pond or Train A service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 		
	 Unit 1: Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated. 	• •	
7.3 Vital Auxiliaries Component C	• Unit 2: Train A component cooling water is provided with non-essential loads isolated.		
	 Unit 1: Train A/Train B component cooling water is provided with non- essential loads isolated. 		
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines. Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	• The construction of the boundary and the potential issue with the element in question was described,
	 The fire hazards and fire protection features on both sides of the barrier were described,
	Et al. 2011 - A and a factor of the Original statement and all the original statements

- Elements with construction features equal to 3-hr boundaries were credited as such,
- The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.





Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room Unit 2: NFPA 805, Section 4.2.4.2 Pe Unit 1: NFPA 805, Section 4.2.3 Dete	erformance-Based Approach - Fire	Risk Evaluation with simplifyi	Required Fire Protection Systems and Features ing deterministic assumptions
Required FP System(s)/Feature	e(s) Description	Required By	Comments	

Required in Oystem(s)n eature(s)	Description	Required by	Comments
Detection	2A-46	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-46	Risk Criteria	Required to meet risk criteria.
Detection	2A-46	DID Criteria	Required to meet DID criteria.
Detection	2A-48	Risk Criteria	Required to meet risk criteria.
Detection	2A-48	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-45	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-45	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Mocifications		Risk Criteria	Modification to seal elec. pen. cabinets 2G and 2F, MCC 2V, 2B H2 Analyzer, transfer relay cabinet, and power supply panel and to replace trip device in panel Q2R42B0001A,

breakers LA08 and LA20.

.

2

2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
FRE for Fire Area 2-034
A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the modification(s) and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
2.91E-07
3.00E-08
The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection and suppression systems were identified as required for DID.
All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.

£

ł





Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-034-IA-001
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. The valve is normally modulated, required modulated to provide makeup. Fire induced damage to instrument air components can prevent makeup, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-001
VFDR	N2B21TR0410:AVAILABLE-TE410:AVAILABLE-TE410, RCS COLD LEG TEMPERATURE RECORDER TR-410 - The RCS Loop 1 indicators are normally available, only one set of the hot and cold leg indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-002
VFDR	N2B21TR0410:AVAILABLE-TE420:AVAILABLE-TE420, RCS COLD LEG TEMPERATURE RECORDER TR-410 - The RCS Loop 2 indicators are normally available, only one set of the hot and cold leg indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID	U2-2-034-SEP-003	
VFDR	N2B31L0001C:ON:OFF, PRESSURIZER HEATER GROUP 2C DISTRIBUTION PANEL - The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-034-SEP-004	
VFDR	N2B31L0001D:ON:OFF, PRESSURIZER HEATER GROUP 2D DISTRIBUTION PANEL - The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-034-SEP-005	
VFDR	N2B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL - The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-034-SEP-006	

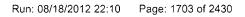






Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2B13HV0003:CLOSED:CLOSED, REACTOR VESSEL HEAD VENT - Q2B13HV0003 - Reactor Vessel Head Vent and Q2B13HV0004 - Reactor Vessel Head Vent. The valves are normally closed, required closed to isolate reactor head vent leakage path. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-007
VFDR	Q2B13HV0004:CLOSED:CLOSED, REACTOR VESSEL HEAD VENT - Q2B13HV0003 - Reactor Vessel Head Vent and Q2B13HV0004 - Reactor Vessel Head Vent. The valves are normally closed, required closed to isolate reactor head vent leakage path. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-009
VFDR	Q2B41P0001B:ON:OFF, RCP 2B - The pump is normally running required off. Fire induced cable damage can prevent ability to trip pump, and a challenge to Reactor Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-010

Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E13V0003B:CLOSED:CLOSED, 2B CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0003B - 2B CS Pump Containment Sump Suction Isolation; Q2E13V0004B - 2B CS Pump Containment Sump Suction Isolation. The valves are normally closed, required closed to prevent loss of RWST to Sump. Fire induced cable damage may spuriously open valve to cause failure of borated water to charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-011
VFDR	Q2E13V0004B:CLOSED:CLOSED, 2B CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0003B - 2B CS Pump Containment Sump Suction Isolation; Q2E13V0004B - 2B CS Pump Containment Sump Suction Isolation. The valves are normally closed, required closed to prevent loss of RWST to Sump. Fire induced cable damage may spuriously open valve to cause failure of borated water to charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-012
VFDR	Q2E16H0009:STANDBY:ON, 600V LOAD CENTER 2D ROOM AIR COOLER - The cooler is normally in standby, required on to support electrical switchgear. Fire induced cable damage may prevent equipment from functioning properly due inadequate environmental concerns, and a challenge to the all Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition _	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-034-SEP-013



Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21V0063:CLOSED:CLOSED, CHARGING PUMP RECIRC TO RCS COLD LEGS - The valve is normally closed, required closed to prevent pump run out of charging pump. Fire induced cable damage may spuriously open valve to cause failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-034-SEP-014
VFDR	Q2E21V0183:CLOSED:CLOSED, EXCESS LETDOWN HX DISCHARGE - Q2E21V0247 -Excess Letdown Isolation; Q2E21V0250 -Excess Letdown Divert Valve; Q2E21V0246 - Excess Letdown Isolation Valve; Q2E21V0183 - Excess Letdown HX Discharge. The valves are normally closed, required closed to isolate excess letdown. Fire induced cable damage may spuriously operate both valves to cause a loss of RCS inventory, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-015
VFDR	Q2E21V0245:CLOSED:CLOSED, RCS PRESSURIZER AUX SPRAY - The valve is normally closed, required closed to control RCS pressure. Fire induced cable damage will fail valve and depressurize RCS, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-016
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1704 of 2430

Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21V0246:OPEN:CLOSED, EXCESS LETDOWN ISOLATION (UNDER REFUELING CANAL) - Q2E21V0247 -Excess Letdown Isolation; Q2E21V0250 - Excess Letdown Divert Valve; Q2E21V0246 - Excess Letdown Isolation Valve; Q2E21V0183 - Excess Letdown HX Discharge. The valves are normally closed, required closed to isolate excess letdown. Fire induced cable damage may spuriously operate both valves to cause a loss of RCS inventory, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-017
VFDR	Q2E21V0247:OPEN:CLOSED, EXCESS LETDOWN ISOLATION (UNDER REFUELING CANAL) - Q2E21V0247 -Excess Letdown Isolation; Q2E21V0250 - Excess Letdown Divert Valve; Q2E21V0246 - Excess Letdown Isolation Valve; Q2E21V0183 - Excess Letdown HX Discharge. The valves are normally closed, required closed to isolate excess letdown. Fire induced cable damage may spuriously operate both valves to cause a loss of RCS inventory, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-018
VFDR	Q2E21V0250:TO VCT:TO VCT, EXCESS LETDOWN DIVERT VALVE - Q2E21V0247 -Excess Letdown Isolation; Q2E21V0250 -Excess Letdown Divert Valve; Q2E21V0246 - Excess Letdown Isolation Valve; Q2E21V0183 - Excess Letdown HX Discharge. The valves are normally closed, required closed to isolate excess letdown. Fire induced cable damage may spuriously operate both valves to cause a loss of RCS inventory, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-034-SEP-019

Fire Safety Analysis Data Manager (4.1)

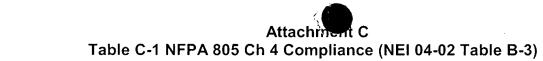
Farley

Run: 08/18/2012 22:10 Page: 1705 of 2430









Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21V0259A:OPEN:OPEN, 2A CHARGING PUMP MINIFLOW ISOLATION - The valve is normally open, required open to prevent damage to the charging pump. Fire induced cable damage can cause spurious valve operation damage credited charging pumps, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-020
VFDR	Q2E21V0259B:OPEN:OPEN, 2B CHARGING PUMP MINIFLOW ISOLATION - The valve is normally open, required open to prevent damage to the charging pump. Fire induced cable damage can cause spurious valve operation damage credited charging pumps, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-021
VFDR	Q2N23V0025B:OPEN:OPEN, MDAFWP TO 2B STEAM GENERATOR ISOLATION - The valve is normally open, required to open to supply AFW to Steam Generator. Fire induced cable damage may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-034-SEP-022

٠,

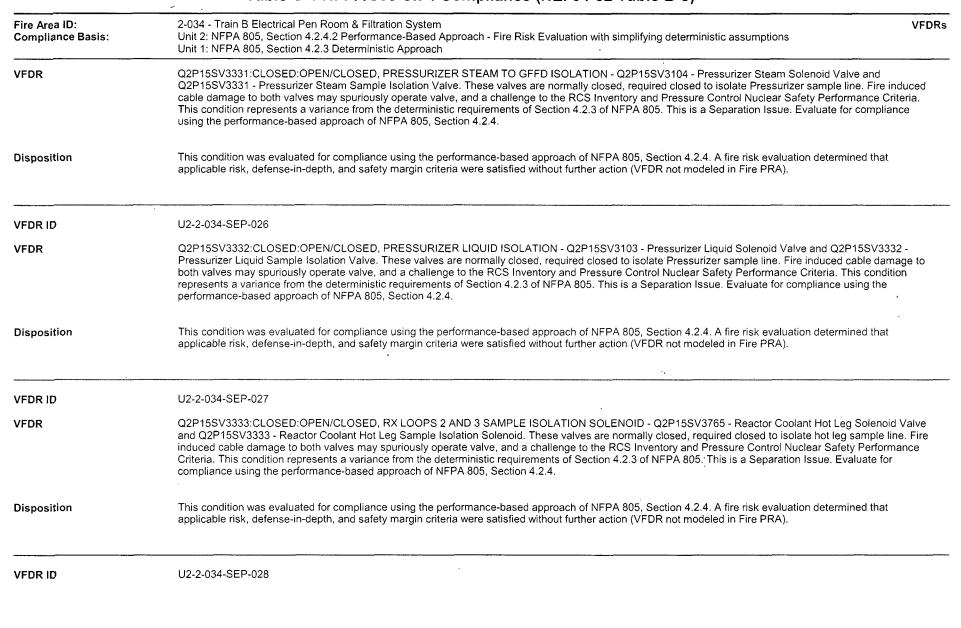
Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2N23V0025E:OPEN:OPEN, MDAFWP TO 2A STEAM GENERATOR ISOLATION - The valve is normally open, required to open to supply AFW to Steam Generator. Fire induced cable damage may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-023
VFDR	Q2P15SV3103:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID SAMPLE ISOLATION - Q2P15SV3103 - Pressurizer Liquid Solenoid Valve and Q2P15SV3332 - Pressurizer Liquid Sample Isolation Valve. These valves are normally closed, required closed to isolate Pressurizer sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-034-SEP-024
VFDR	Q2P15SV3104:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM SAMPLE ISOLATION - Q2P15SV3104 - Pressurizer Steam Solenoid Valve and Q2P15SV3331 - Pressurizer Steam Sample Isolation Valve. These valves are normally closed, required closed to isolate Pressurizer sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-034-SEP-025



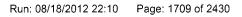








Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2P15SV3765:CLOSED:OPEN/CLOSED, RCS HOT LEG SAMPLE ISOLATION SOLENOID - Q2P15SV3765 - Reactor Coolant Hot Leg Solenoid Valve and Q2P15SV3333 - Reactor Coolant Hot Leg Sample Isolation Solenoid. These valves are normally closed, required closed to isolate hot leg sample line. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-034-SEP-030
VFDR	Q2B31L0001B:ON/OFF:ON/OFF, PRESSURIZER HEATER GROUP 2B DISTRIBUTION PANEL - The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage and control power supply failure can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-031
VFDR	N2B31PT0445:AVAILABLE:AVAILABLE, SAFETY INJECTION PRESSURIZER TANK PRESSURE TRANSMITTER - Q2B31V0053 - Pressurizer Power Operated Relief; N2B31PT0445 - Safety Injection Pressurizer Tank Pressure Transmitter. The valve is normally closed, required to cycle to control RCS pressure. Fire induced damage due to instrument air components and transmitter signal prevent the ability to control RCS pressure, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA-805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-032







Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - Q2B31V0053 - Pressurizer Power Operated Relief; N2B31PT0445 - Safety Injection Pressurizer Tank Pressure Transmitter. The valve is normally closed, required to cycle to control RCS pressure. Fire induced damage due to instrument air components and transmitter signal prevent the ability to control RCS pressure, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-033
VFDR	Q2E11V0025B:CLOSED:CLOSED, CONTAINMENT SUMP TO 2B RHR PUMP (INSIDE ENCAPSULATION) - Q2E11V0025B - Containment Sump to 2B RHR Pump; Q2E11V0026B - Containment Sump to 2B RHR Pump. The valves are normally closed, required closed to prevent loss of RWST to Sump. Fire induced cable damage can spuriously operate valves to cause failure of borated water to charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-034
VFDR	Q2E11V0026B:CLOSED:CLOSED, CONTAINMENT SUMP TO 2B RHR PUMP - Q2E11V0025B - Containment Sump to 2B RHR Pump; Q2E11V0026B - Containment Sump to 2B RHR Pump. The valves are normally closed, required closed to prevent loss of RWST to Sump. Fire induced cable damage can spuriously operate valves to cause failure of borated water to charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-034-SEP-037

Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - Q2E21P0002B - 2B Charging Pump; Q2E21P0002C - 2C Charging Pump; Q2R41L0001E - 125Vdc Distribution Panel 2E. The pump is normally in Standby, required off, required off, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-038
VFDR	Q2E21P0002C:ON:ON/OFF, 2C CHARGING PUMP - Q2E21P0002B - 2B Charging Pump; Q2E21P0002C - 2C Charging Pump; Q2R41L0001E - 125Vdc Distribution Panel 2E. The pump is normally in Standby, required off, required off, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-039
VFDR	Q2R41L0001E:ENERGIZED:ENERGIZED, 125V DC DISTRIBUTION PANEL 2E - Q2E21P0002B - 2B Charging Pump; Q2E21P0002C - 2C Charging Pump; Q2R41L0001E - 125Vdc Distribution Panel 2E. The pump is normally in Standby, required off, required off, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-040
Fire Safety Analysis Data I	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1711 of 243(









Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21V0016B:CLOSED:CLOSED-TRAIN B, HHSI TO RCS COLD LEG ISOLATION - The valve is normally closed, required closed to prevent charging pump run out. Fire induced damage generates SIAS signal to cause failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-041
VFDR	Q2E21V0258:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - The valve is normally open, required to open to maintain RCS inventory. Fire induced cable damage and spurious SIAS signal generated by instrument failure can preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-042
VFDR	Q2E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - The valve is normally open, required to open to maintain RCS inventory. Fire induced damage to instruments generate a spurious SIAS signal to close the valve preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-043

Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valves are normally open, required open to supply VCT to charging pump. Fire induced cable damage to Q2E21V0376A and cascading power failures to instruments cabinets power supplies generate SIAS and spurious VCT level spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-044
VFDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valves are normally open, required open to supply VCT to charging pump. Fire induced cable damage to Q2E21V0376B and cascading power failures to instruments cabinets power supplies generate SIAS and spurious VCT level spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-045
VFDR	Q2B31V0061:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF VALVE - The valve is normally closed, required closed to control pressure. Fire induced cable damage prevent ability to adequately control RCS pressure control, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-046

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:10 Page: 1713 of 2430



5



.



Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2E11P0001A:OFF:ON/OFF, 2A RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump. The pumps are normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-047
VFDR	Q2E11P0001B:OFF:ON/OFF, 2B RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump. The pumps are normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-048
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required modulate to control steam generator pressure. Fire induced cable damage, instrument air components failures and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-049
Fire Safety Analysis Data N	Manager (4.1) . Farley Run: 08/18/2012 22:10 Page: 1714 of 2430

Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - The valve is normally closed, required modulate to control steam generator pressure. Fire induced cable damage, instrument air components failures and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-050
VFDR	Q2N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to instruments generate a spurious signal, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-051
VFDR	Q2N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to instruments generate a spurious signal, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-052

Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1A - Q2N23P0002 - TDAFW Pump; Q2N23HV3228A - TDAFW Supply to Steam Generator 1A. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage, instrument air components failures, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	·
VFDR ID	U2-2-034-SEP-053
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228A - TDAFW Supply to Steam Generator 2A. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage, instrument air components failures, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-054
VFDR	Q2N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2B - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply to Steam Generator 2B. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage, instrument air components failures, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

1

Fire Area ID: Compliance Basis:	2-034 - Train B Electrical Pen Room & Filtration System Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-034-SEP-055
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply to Steam Generator 2B. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage, instrument air components failures, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-056
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2C - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 2C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage, instrument air components failures, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-034-SEP-057
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 2C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage, instrument air components failures, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.



Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		Fire Area Definition
Fire Zone ID	Description	;	
2333	2333 Electrical Penetration Room, Train A	1	
2347	2347 Electrical Penetration Room		
		;	

11

4

•

Compliance Basis:	2-035 - Train A Electrical Pen Rooms Jnit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Jnit 1: NFPA 805, Section 4.2.3 Deterministic Approach	e Risk Evaluation with simplifying deterministic assump	Performance Goals
Performance Goal	Method of Accomplishment	Comments	:
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Tri	p Reactor is manually tripped from the Control Room.		,
2.2 Reactivity Control - Maintain Su Conditions	 Unit 2: Subcritical conditions are maintained by isola boron dilution and by charging borated water from th charging pump or swing charging pump via Train B p 	ne RWST using Train B	
	 Unit 1: Subcritical conditions are maintained by isola boron dilution and by charging borated water from th charging pump, Train B charging pump or swing cha A/Train B power. 	ne RWST using Train A	,
3.1 RCS Inventory Control - RCS N	 • Unit 2: RCS inventory is controlled using Train B cha charging pump via Train B power aligned to the RWS 		
	 Unit 1: RCS inventory is controlled using Train A cha charging pump or swing charging pump via Train A/[*] the RWST. 		
3.2 RCS Inventory Control - Isolate Paths	 Leakage Unit 2: Normal letdown is isolated using performance isolation valves, letdown isolation valve or letdown p isolation valve. Excess letdown is isolated using one or containment isolation valves. PZR PORV leakage performance-based approach Train A PORV or bloc PORV. The RCS to RHR high/low pressure interface Train A/Train B RHR inboard isolation valve. 	path containment e or more excess letdown e paths are isolated using ck valve and Train B	
	 Unit 1: Normal letdown is isolated using orifice isolat isolation valve, or a letdown path containment isolati letdown is isolated using one or more excess letdow isolation valves. PZR PORV leakage paths are isolar and Train B PORV. The RCS to RHR high/low press using the Train A/Train B RHR inboard isolation valv RHR outboard isolation valve. 	ion valve. Excess /n or containment ited using Train A PORV sure interface is isolated	

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: 2-035 - Train A Electrical Pen Rooms Performance Goals Compliance Basis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying, deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach Performance Goal Method of Accomplishment Comments 3.3 RCS Inventory Control - RCP Seal Integrity Unit 2: Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance-based approach tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves. • Unit 1: Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train A charging pump, Train B charging pump or swing charging pump via Train A/Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve. 4.1 RCS Pressure Control - Pressure Transient • Unit 2: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are performance-based approach shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups. • Unit 1: Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups. 4.2 RCS Pressure Control - Positive Pressure Unit 2: Positive control of RCS pressure is accomplished with performance-Control based approach Train B PORV for pressure reduction and Pressurizer Heater Group B for pressure increase. • Unit 1: Positive control of RCS pressure is accomplished with Train A PORV. Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase. 5 Decay Heat Removal • Unit 2: Decay heat removal during HSD is accomplished using Train B MDAFW pump Steam Generator 2C. Main feed is isolated to prevent uncontrolled cooldown. Unit 1: Decay heat removal during HSD is accomplished using Train A MDAFW pump, Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.

Compliance Basis: Un	135 - Train A Electrical Pen Rooms it 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Ev it 1: NFPA 805, Section 4.2.3 Deterministic Approach	aluation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
6 Process Monitoring	 Unit 2: 1. Shutdown Margin - Performance-based approach a margin is monitored. 2. RCS Pressure - RCS pressure is monarrow range Ch 3, PZR non-safety channel. 3. Pressurizer Pressurizer level is monitored by PZR level Ch 3. 4. RCS Te Performance-based approach RCS Loop 3 temperature is mon hot and cold leg RTDs. 5. SG Pressure - Steam Generator 2A/21 pressure is monitored. 6. SG Level - Steam Generator 2A/21 monitored. 	onitored by PZR Level - emperature - onitored by loop 2A/2B/2C
	 Unit 1: 1. Shutdown Margin - Shutdown margin is monitored range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pre monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperatu 1/Loop 2/Loop 3 temperature is monitored by loop hot and co RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressu monitored. 6. SG Level - Steam Generator 1A/1B/1C level is 	is monitored by and RCS wide essurizer level is re - RCS Loop Id leg re is
7.1 Vital Auxiliaries Electrical	 Unit 2: 1. Electrical power is supplied by off-site power via SU diesel generator EDG-2B. 2. 4.16 kV and 600 V power is sup B distribution equipment. 3. 125 VDC power and 120 VAC p supplied by Train B equipment. 	pplied by Train
	 Unit 1: 1. Electrical power is supplied by off-site power via SU diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V p supplied by Train A/Train B distribution equipment. 3. 125 V 120 VAC power is supplied by Train A/Train B equipment. 	ower is
7.2 Vital Auxiliaries Service Water	 Unit 2: Train B service water is provided with two service water service recirculating to the pond or Train B service water is pr service water pump in service recirculating to the pond and no turbine building loads isolated. 	ovided with one
	 Unit 1: Train A/Train B service water is provided with two services pumps in service recirculating to the pond or Train A/Train B service water pump in service recirculating and non-essential turbine building loads isolated. 	service water is
7.3 Vital Auxiliaries Component Cool	ng Water Train A/Train B component cooling water is provided with non-e isolated.	essential loads
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Ro essential locations is provided with HVAC equipment correspor service water train.	

Fire Safety Analysis Data Manager (4.1)









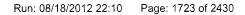
Fire Area ID:	2-035 - Train A Electrical Pen Rooms	Performance Goals
Compliance Basis:	Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
	Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	

1

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Engineering Evaluations Engineering Evaluations Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,
	 The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described,
	Elements with construction features equal to 3-hr boundaries were credited as such,
	• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.









 Fire Area ID:
 2-035 - Train A Electrical Pen Rooms
 Required Fire Protection Systems and Features

 Compliance Basis:
 Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions

 Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach

Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-47	Risk Criteria	Required to meet risk criteria.
Detection	2A-47	DID Criteria	Required to meet DID criteria.
Detection	2A-47 [2333]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-47 [2333]	Risk Criteria	Required to meet risk criteria.
Detection	2A-47 [2333]	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Modifications		Risk Criteria	Modification to seal 2AH2 Analyzer, MCC 2U, and power supply panel to prevent fire propagation outside of ignition source.

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 2-035
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the modification to seal 2AH2 analyzer and power supply panel and the installed detection system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	5.62E-08
ΔLERF	5.09E-10
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.

Comments

Fire Safety Analysis Data Manager (4.1)



•



Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-035-IA-001
VFDR	Q2B31V0061:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2B31V0061 - Pressurizer PORV. The normally closed PORV valve required to cycle to control RCS pressure transient. Fire induced damage to instrument air components may result in spuriously closing of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-035-SEP-001
VFDR	Q2B13HV0001:CLOSED:CLOSED, REACTOR VESSEL HEAD VENT - Q2B13HV0001 - Reactor Vessel Head Vent and Q2B13HV0002 - Reactor Vessel Head Vent. The valve is normally closed, required closed to isolate reactor head vent leakage path. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-035-SEP-002
VFDR	Q2B13HV0002:CLOSED:CLOSED, REACTOR VESSEL HEAD VENT - Q2B13HV0001 - Reactor Vessel Head Vent and Q2B13HV0002 - Reactor Vessel Head Vent. The valve is normally closed, required closed to isolate reactor head vent leakage path. Fire induced cable damage to both valves may spuriously operate valve, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	- This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms VFDRs Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ID	U2-2-035-SEP-003
VFDR	Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - Q2B31V0027A - PORV Block Valve and Q2B31V0053 - Pressurizer Power Operated Relief; The normally open PORV isolation valve and normally closed PORV valves required closed to control RCS pressure transient. Fire induced cable damage may result in spuriously opening of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-035-SEP-004
VFDR	Q2B41P0001A:ON:OFF, RCP 2A - Q2B41P0001A - RCP 2A. The pump is normally on, required off to prevent RCS inventory losses. Fire induced cable damage may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-035-SEP-005
VFDR	Q2B41P0001C:ON:OFF, RCP 2C - Q2B41P0001C - RCP 2C. The pump is normally on, required off to prevent RCS inventory losses. Fire induced cable damage may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-035-SEP-006
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1727 of 2430

1

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR ,	Q2E13V0003A:CLOSED:CLOSED, 2A CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0003A - 2A CS Pump Containment Sump Suction Isolation; Q2E13V0004A - 2A CS Pump Containment Sump Suction Isolation. The valves are normally closed, required closed to prevent loss of RWST to Sump. Fire induced cable damage may spuriously open valve to cause failure of borated water to charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-035-SEP-007
VFDR	Q2E13V0004A:CLOSED:CLOSED, 2A CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0003A - 2A CS Pump Containment Sump Suction Isolation; Q2E13V0004A - 2A CS Pump Containment Sump Suction Isolation. The valves are normally closed, required closed to prevent loss of RWST to Sump. Fire induced cable damage may spuriously open valve to cause failure of borated water to charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-035-SEP-008
VFDR	Q2E21V0265:OPEN:OPEN, CHARGING PUMPS MINIFLOW ISOLATION - Q2E21V0265 - Charging Pump Miniflow Isolation. The valve is normally open, required open for min flow requirement for charging pump. Fire induced cable damage may spuriously close valve cause failure of charging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-035-SEP-009

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
VFDR	Q2N23V0025A:OPEN:OPEN, MDAFWP TO 2A STEAM GENERATOR ISOLATION - Q2N23V0025A - MDAFWP to 2A Steam Generator Isolation. The valve is normally open, required to open to supply AFW to Steam Generator. Fire induced cable damage may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-035-SEP-010
VFDR	Q2N23V0025F:OPEN:OPEN, MDAFW ISOLATION TO 2C STEAM GENERATOR MOV3764F - Q2N23V0025F - MDAFWP Isolation to 2C Steam Generator MOV3764F. The valve is normally open, required to open to supply AFW to Steam Generator. Fire induced cable damage may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-035-SEP-011
VFDR	N2B21TR0410:AVAILABLE-TE410:AVAILABLE-TE410, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage and cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-035-SEP-012
Fire Safety Analysis Data I	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1729 of 2430

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR	N2B21TR0413:AVAILABLE-TE413:AVAILABLE-TE413, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N2B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 1 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage and cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U2-2-035-SEP-013		
VFDR	N2B21TR0410:AVAILABLE-TE430:AVAILABLE-TE430, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 3 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage and cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-014		
VFDR	N2B21TR0413:AVAILABLE-TE433:AVAILABLE-TE433, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N2B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TR-413. These RCS Loop 3 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage and cascading power failures result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Basis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR ID	U2-2-035-SEP-015		
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - Q2B31L0001A - Pressurizer Heater Group 2A Distribution Panel, Q2R41L0001B - 125Vdc Distribution Panel 2B. The heater is normally available, required off and panel normally energized, required energized to prevent pressure transient. Fire induced cable damage and cascading power failures result in failure prevent heater operation, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2, of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-016		
VFDR	Q2B31V0027A:OPEN:OPEN/CLOSED, PORV BLOCK VALVE - Q2B31V0027A - PORV Block Valve and Q2B31V0053 - Pressurizer Power Operated Relief; The normally open PORV isolation valve and normally closed PORV valves required closed to control RCS pressure transient. Fire induced cable damage mar result in spuriously opening of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-017		
VFDR	N2C55NI0032A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32A - N2C55NI0032A - Source Range Count Rate Indicator NI- 32A and Q2R21L0001B - 120V Vital AC Instrument Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading power supply failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U2-2-035-SEP-018		
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1731 of 2430		



Fire Area ID: 2-035 - Train A Electrical Pen Rooms Compliance Basis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions VFDR Q2E11V0025A:CLOSED:CLOSED, CONTAINMENT SUMP TO 2A RHR PUMP (INSIDE ENCAPSULATION) - Q2E11V0025A - Containment Sump to 2A RHR Pump. The valves are normally closed, required closed to prevent loss of RWS cable damage can spuriously operate valves to cause failure of borated water to charging pump, and a challenge to the Reactivity Cor and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements or 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
			Disposition
VFDR ID	U2-2-035-SEP-019		
VFDR	Q2E11V0026A:CLOSED:CLOSED, CONTAINMENT SUMP TO 2A RHR PUMP - Q2E11V0025A - Containment Sump to 2A RHR Pump; Q2E11V0026A - Containment Sump to 2A RHR Pump. The valves are normally closed, required closed to prevent loss of RWST to Sump. Fire induced cable damage can spuriously operate valves to cause failure of borated water to charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-022		
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - Q2E21P0002A - 2A Charging Pump; Q2E21P0002B - 2B Charging Pump Q2R41L0001B - 125Vdc Distribution Panel 2B. The pump is normally in Standby, required off, required off, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-023		

Fire Safety Analysis Data Manager (4.1)

~

re Area ID: 2-035 - Train A Electrical Pen Rooms ompliance Basis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach			
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - Q2E21P0002A - 2A Charging Pump; Q2E21P0002B - 2B Charging Pump Q2R41L0001B - 125Vdc Distribution Panel 2B. The pump is normally in Standby, required off, required off, and panel normally energized, required energized to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-024		
VFDR	Q2E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - Q2E21V0016A - HHSI to RCS Cold Leg Isolation. The valve is normally closed, required closed to prevent charging pump run out. Fire induced cable damage and cascading power failures may generate a SIAS to cause a failure of chargi pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-025		
VFDR	Q2E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q2E21V0257 - Charging Pumps to Regen HX. The valve is normally open, required to ope to maintain RCS inventory. Fire induced cable damage and spurious SIAS signal generated once the battery is depleted may close the valve preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-026		

Fire Safety Analysis Data Manager (4.1)

1

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Q2E21V0347 - Charging Flow Control Valve. The valve is normally throttled, required to throttle to maintain RCS inventory. Fire induced damage due to instrument air components and cascading power supply failure prevent ability to maintain reactivity and inventory control, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-027		
VFDR	Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced cable damage to Q2E21V0376A and cascading power failures to instruments cabinets power supplies generate SIAS after battery depletion or environmental failure can spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-028		
VFDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced cable damage to Q2E21V0376A and cascading power failures to instruments cabinets power supplies generate SIAS after battery depletion or environmental failure can spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
	U2-2-035-SEP-029		

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR	Q2E21V0253A:THROTTLED:MODULATE, LETDOWN ORIFICE ISOLATION 45 GPM - Q2E21V0253A/B/C -Letdown Orifice Isolation; Q2E21V0367 - Letdown Line Isolation; Q2E21V0368 - Letdown Line Isolation. The valves are normally open, with either one of the letdown line isolation valves or all the orifice valves required closed to isolate letdown. Fire induced cable damage may spuriously operate all valves to cause a loss of RCS inventory, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-035-SEP-030	
VFDR	Q2E21V0253B:THROTTLED:MODULATE, LETDOWN ORIFICE ISOLATION 60 GPM - Q2E21V0253A/B/C -Letdown Orifice Isolation; Q2E21V0367 - Letd Line Isolation; Q2E21V0368 - Letdown Line Isolation. The valves are normally open, with either one of the letdown line isolation valves or all the orifice valve required closed to isolate letdown. Fire induced cable damage may spuriously operate all valves to cause a loss of RCS inventory, and a challenge to the R Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-035-SEP-031	
VFDR	Q2E21V0253C:THROTTLED:MODULATE, LETDOWN ORIFICE ISOLATION 60 GPM - Q2E21V0253A/B/C -Letdown Orifice Isolation; Q2E21V0367 - Letdow Line Isolation; Q2E21V0368 - Letdown Line Isolation. The valves are normally open, with either one of the letdown line isolation valves or all the orifice valves required closed to isolate letdown. Fire induced cable damage may spuriously operate all valves to cause a loss of RCS inventory, and a challenge to the RC3 Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
·		
VFDR ID	U2-2-035-SEP-032	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:10 Page: 1735 of 2430

Attachn h C

 Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

٠

Fire Area ID: 2-035 - Train A Electrical Pen Rooms Compliance Basis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deter Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		VFDRs	
VFDR	Q2E21V0368 - Letdown Line Isolation. to isolate letdown. Fire induced cable da Pressure Control Nuclear Safety Perforr	/CLOSED, LETDOWN LINE ISOLATION - Q2E21V0253A/B/C -Letdown Orifice Isolation; Q2E21V0367 - Letdown Line Isolation; e Isolation. The valves are normally open, with either one of the letdown line isolation valves or all the orifice valves required closed ced cable damage may spuriously operate all valves to cause a loss of RCS inventory, and a challenge to the RCS Inventory and afety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition		ance using the performance-based approach of NFPA afety margin criteria were satisfied without further actio		that
VFDR ID	U2-2-035-SEP-033			
VFDR	Q2E21V0368 - Letdown Line Isolation. to isolate letdown. Fire induced cable da Pressure Control Nuclear Safety Perforr	CLOSED, LETDOWN LINE ISOLATION - Q2E21V0253A/B/C -Letdown Orifice Isolation; Q2E21V0367 - Letdown Line Isolation; e Isolation. The valves are normally open, with either one of the letdown line isolation valves or all the orifice valves required closed cable damage may spuriously operate all valves to cause a loss of RCS inventory, and a challenge to the RCS Inventory and afety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition		ance using the performance-based approach of NFPA afety margin criteria were satisfied without further actio		hat
VFDR ID	U2-2-035-SEP-034			
VFDR	required off to prevent pump damage pr and a challenge to the RCS Inventory at	FF, 2A RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump. The pump is normally off, p damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal may spuriously start pump, b Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a istic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based ction 4.2.4.		
Disposition		or compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that th, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-035		· · · ·	
			i,	
Fire Safety Analysis Data N	Manager (4.1)	Farley	Run: 08/18/2012 22:10 Page	: 1736 of 2430

Fire Area ID: 2-035 - Train A Electrical Pen Rooms Compliance Basis: Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach VFDR Q2E11P0001B:OFF:ON/OFF, 2B RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump. The required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced damage generates a SIAS signal may and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This or variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using th approach of NFPA 805, Section 4.2.4.			
			Disposition
VFDR ID	U2-2-035-SEP-036		
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q2N11PV3371A - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-037		
VFDR	Q2N11PV3371C:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q2N11PV3371C - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-035-SEP-038		

Fire Safety Analysis Data Manager (4.1)



Attachnient C

Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach			
VFDR	Q2N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - Q2N12V0001A - TDAFP Steam Supply Isolation Valve HV3235A. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to cascading power supply to instruments cabinets generate a spurious signal, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-035-SEP-039			
VFDR	Q2N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - Q2N12V0001B - TDAFP Steam Supply Isolation Valve HV3235B. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to cascading power supply to instruments cabinets generate a spurious signal, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criter This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
vfdr ið	U2-2-035-SEP-040			
VFDR	Q2N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2A - Q2N23P0002 - TDAFW Pump; Q2N23HV3228A - TDAFW Supply to Steam Generator 2A. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805; Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
	U2-2-035-SEP-041			

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
/FDR Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228A - TDAFW Generator 2A. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to s overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals or prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-035-SEP-042	
VFDR	Q2N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2B - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply Steam Generator 2B. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generat and overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve; and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-035-SEP-043	
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply to Steam Generator 2B. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represent variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Area ID: Compliance Basis:	2-035 - Train A Electrical Pen Rooms Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
/FDR ID U2-2-035-SEP-044		
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2C - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 2C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of battery may prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-035-SEP-045	
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Generator 2C. The pump is normally off, required off; valve is normally open required closed to prevent uncontrolled TDAFW supply to steam gener overfill. Fire induced damage to instrument air components, cascading loss of power to TDAFW UPS and spurious instrument signals on loss of bat prevent the ability to turn pump off or close valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition is variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance approach of NFPA 805, Section 4.2.4.	
Disposition	 This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Area ID: Compliance Basis:	2-039 - Fuel Storage & Storage Rack Pits Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	Fire Area Definition
Fire Zone ID	Description	
2349	2349 Pits for New Fuel Storage Racks	

Fire Safety Analysis Data Manager (4.1)

2350

2459

2350 Pits for New Fuel Storage Racks 2459 New Fuel Storage Room

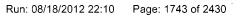


Compliance Basis:	-039 - Fuel Storage & Storage Rack Pits Jnit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fir Jnit 1: NFPA 805, Section 4.2.3 Deterministic Approach		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Tri	P Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Su Conditions	 • Unit 2: Subcritical conditions are maintained by isola boron dilution and by charging borated water from th charging pump or swing charging pump aligned to T 	ne RWST using Train A	
	 Unit 1: Subcritical conditions are maintained by isola boron dilution and by charging borated water from th charging pump, Train B charging pump or swing cha A/Train B power. 	ne ŘWST using Train A	
3.1 RCS Inventory Control - RCS N	 • Unit 2: RCS inventory is controlled using Train A chackers • Unit 2: RCS inventory is controlled using Train A chackers • Unit 2: RCS inventory is controlled using Train A chackers 		
	 Unit 1: RCS inventory is controlled using Train A cha charging pump or swing charging pump via Train A/ the RWST. 		
3.2 RCS Inventory Control - Isolate Paths	Leakage Normal letdown is isolated using orifice isolation valve valve or letdown path containment isolation valve. Ex using one or more excess letdown or containment iso leakage paths are isolated using Train A PORV and T to RHR high/low pressure interface is isolated using the inboard isolation valve and Train A/Train B RHR outbo	cess letdown is isolated lation valves. PZR PORV rain B PORV. The RCS ne Train A/Train B RHR	
3.3 RCS Inventory Control - RCP S	 Unit 2: Maintain RCP Seal Integrity - RCP seal integrity of tripping all RCPs, maintaining normal seal injection pump, Train B charging pump or swing charging pump over, and preventing failure of the RCP thermal bar paths are secured by isolating the supply and dischar CCW to RCP thermal barriers are isolated using cor or the CCW to RCP thermal barrier isolation valve. 	using Train A charging np via Train A/Train B irriers. RCP seal injection arge seal injection lines.	;
	 Unit 1: Maintain RCP Seal Integrity - RCP seal integrity fripping all RCPs, maintaining normal seal injection pump, Train B charging pump or swing charging pum power, and preventing failure of the RCP thermal barpaths are secured by isolating the supply and discharce CCW to RCP thermal barriers are isolated using cor or the CCW to RCP thermal barrier isolation valve. 	using Train A charging np via Train A/Train B irriers. RCP seal injection arge seal injection lines.	

Compliance Basis: Unit 2: NFPA 805,		age & Storage Rack Pits 5, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalu 5, Section 4.2.3 Deterministic Approach	Performance Goals ation with simplifying deterministic assumptions
Performance Goal		Method of Accomplishment	Comments
4.1 RCS Pressure Control - Pres		 Unit 2: Undesired depressurization due to inadvertent spray is p gensuring auxiliary spray valve remains closed and the Loop 1 a RCPs are shut off. Undesired pressure increase is prevented b deenergizing all pressurizer heater groups. 	nd Loop 2
		• Unit 1: Undesired depressurization due to inadvertent spray is p ensuring auxiliary spray valve remains closed and the Loop 1 a RCPs are shut off. Undesired pressure increase is prevented b deenergizing all pressurizer heater groups.	nd Loop 2
4.2 RCS Pressure Control - Posi Control	tive Pressure	• Unit 2: Positive control of RCS pressure is accomplished with Tr PORV or aux spray for pressure reduction and Pressurizer Hea A/B for pressure increase.	
		 Unit 1: Positive control of RCS pressure is accomplished with Train B PORV or aux spray for pressure reduction and Pressuri. Group A/B for pressure increase. 	
5 Decay Heat Removal		 Unit 2: Decay heat removal during HSD is accomplished using MDAFW pump, Train B MDAFW pump or TDAFW pump supply Generator 2A/2B/2C. Main feed is isolated to prevent uncontroll 	ing Steam
		 Unit 1: Decay heat removal during HSD is accomplished using MDAFW pump, Train B MDAFW pump and TDAFW pump supp Generator 1A/1B/1C. Main feed is isolated to prevent uncontroll 	lying Steam
6 Process Monitoring		• Unit 2: 1. Shutdown Margin - Shutdown margin is monitored by range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, RG range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Press monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold RTDs. 5. SG Pressure - Steam Generator 2A/2B/2C pressure monitored. 6. SG Level - Steam Generator 2A/2B/2C level is m	monitored by CS wide surizer level is - RCS Loop leg is
		Unit 1: 1. Shutdown Margin - Shutdown margin is monitored by range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, ar range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Press monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C pressure monitored. 6. SG Level - Steam Generator 1A/1B/1C level is m	monitored by nd RCS wide urizer level is - RCS Loop leg is

Fire Safety Analysis Data Manager (4.1)

ę



Compliance Basis: U	039 - Fuel Storage & Storage Rack Pits nit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with si nit 1: NFPA 805, Section 4.2.3 Deterministic Approach	A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Performance Goal	Method of Accomplishment	Comments	
7.1 Vital Auxiliaries Electrical	 Unit 2: 1. Electrical power is supplied by off-site power via SUT 2A/SUT 2B, diesel generator EDG1-2A/EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 	1	
	 Unit 1: 1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG1-2A/EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment. 		
7.2 Vital Auxiliaries Service Water	Train A/Train B service water is provided with two service water pumps in service recirculating to the pond or Train A/Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries Component Coc	Ding Water Train A/Train B component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

3

Fire Area ID: Compliance Basis:	2-039 - Fuel Storage & Storage Rack Pits Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No ·
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	The fire areas, fire zones and rooms on both sides of the barrier were identified,

• The construction of the boundary and the potential issue with the element in question was described,

• The fire hazards and fire protection features on both sides of the barrier were described,

• Elements with construction features equal to 3-hr boundaries were credited as such,

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.







Fire Area ID: Compliance Basis:	2-039 - Fuel Storage & Storage Rack Pits Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach
Title	FRE for Fire Area 2-039
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	5.16E-11
Δ LERF	1.24E-14
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, no additional DID features were identified.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

1

Fire Area ID: Compliance Basis:	2-039 - Fuel Storage & Storage Rack Pits Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach		
VFDR ID	U2-2-039-IA-001		
VFDR	Q2B31V0053:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2B31V0053 - Pressurizer Power Operated Relief. The valve is normally closed, required modulated to control pressure. Fire induced damage to instrument air components can prevent makeup, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-039-1A-002		
VFDR	Q2B31V0061:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2B31V0061 - Pressurizer Power Operated Relief. The valve is normally closed, required modulated to control pressure. Fire induced damage to instrument air components can prevent makeup, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that icable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-039-IA-003		
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2E21V0347 - Charging Flow Control Valve. The valve is normally modulated, required modulated to provide makeup. Fire induced damage to instrument air components can prevent makeup, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		

Fire Area ID: Compliance Basis:	2-039 - Fuel Storage & Storage Rack Pits Unit 2: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions Unit 1: NFPA 805, Section 4.2.3 Deterministic Approach	
VFDR ID	U2-2-039-IA-004	
VFDR	Q2N11PV3371A:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument a is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2N11PV3371A - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components failure prevent the ability to cont steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-039-IA-005	
VFDR	Q2N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument ai is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2N11PV3371B - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components failure prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-039-IA-006	
VFDR	Q2N11PV3371C:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2N11PV3371C - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components failure prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition [°]	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

1

ire Area ID: Compliance Basis:	2-040-U1 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-E	Based Approach - Fire Risk Evaluation wi	ith simplifying deterministic assumptions	Fire Area Definitio
Fire Zone ID 2318-U1	Description . 2318 Cable Spreading Room	a.		
	•	ч (
			e de la construcción de la constru El construcción de la construcción d	

Fire Safety Analysis Data Manager (4.1)

.



Fire Area ID: 2- Compliance Basis: NF	040-U1 - Cable Spreading Room PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Er	valuation with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
2.2 Reactivity Control - Maintain Sub Conditions	Subcritical conditions are maintained by isolating the V dilution and by charging borated water from the RWST pump, Train B charging pump or swing charging pump power.	using Train A charging
3.1 RCS Inventory Control - RCS Ma	RCS inventory is controlled using Train A charging pun pump or swing charging pump via Train A/Train B powe	
3.2 RCS Inventory Control - Isolate I Paths	Leakage Normal letdown is isolated using orifice isolation valves valve, or a letdown path containment isolation valve. Existence of the second secon	ccess letdown is ent isolation valves. ORV and Train B isolated using the
3.3 RCS Inventory Control - RCP Se	al Integrity Maintain RCP Seal Integrity - RCP seal integrity is main RCPs, maintaining normal seal injection using Train A charging pump or swing charging pump via Train A/Tra preventing failure of the RCP thermal barriers. RCP sea secured by isolating the supply and discharge seal inje RCP thermal barriers are isolated using containment is CCW to RCP thermal barrier isolation valve.	charging pump, Train B in B power, and al injection paths are ction lines. CCW to
4.1 RCS Pressure Control - Pressur	e Transient Undesired depressurization due to inadvertent spray is ensuring auxiliary spray valve remains closed and the RCPs are shut off. Undesired pressure increase is pre all pressurizer heater groups.	Loop 1 and Loop 2
4.2 RCS Pressure Control - Positive Control	Pressure Positive control of RCS pressure is accomplished with PORV or aux spray for pressure reduction and Pressur for pressure increase.	

	2-040-U1 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalua	tion with simplifying deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Trai pump, Train B MDAFW pump and TDAFW pump supplying 1A/1B/1C. Main feed is isolated to prevent uncontrolled coo	Steam Generator
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by sol detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is m narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressur monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperat 1/Loop 2/Loop 3 temperature is monitored by loop hot and c RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C press monitored. 6. SG Level - Steam Generator 1A/1B/1C level	onitored by PZR RCS wide range zer level is ure - RCS Loop old leg ure is
7.1 Vital Auxiliaries – Electrical	 Electrical power is supplied by off-site power via SUT 1A generator EDG1-2A/EDG-1B. 4.16 kV and 600 V power Train A/Train B distribution equipment. 125 VDC power power is supplied by Train A/Train B equipment. 	is supplied by
7.2 Vital Auxiliaries – Service Wate	er Performance-based approach Train A/Train B service water two service water pumps in service recirculating to the pond service water is provided with one service water pump in se to the pond and non-essential turbine building loads isolated	or Train A/Train B vice recirculating
7.3 Vital Auxiliaries – Component Water	Cooling Train A/Train B component cooling water is provided with no isolated.	n-essential loads
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by performance-based ap A/Train B HVAC. Room cooling at essential locations is provequipment corresponding to the service water train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled. Initiation of the manual carbon dioxide suppression system will not damage components needed for safe shutdown; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Fire Safety Analysis Data Manager (4.1)

ji t

Farley

Run: 08/18/2012 22:10 Page: 1751 of 2430





1

Fire Area ID: Compliance Basis:	2-040-U1 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions				
Engineering Evaluation ID Revision	ENGDOC, SM-97-1561-001 Fire 8	Barrier Penetration Seal Limiting Design Parameter Evaluation	ſ		
Inactive	No				
Functionally Equivalent	No				
Adequate for the Hazard	Yes		1		
Summary	Purpose:				
	Evaluate various penetration seals which, as a result of plant walkdowns of as built configurations, exhibited one or more Limiting Design Parameters (LDPs) which were outside limits previously established via qualification test reviews.				
	Bases for Acceptability:				
	The basis of the evaluation was to establish the acceptability of the field established configurations through either:				
	Refinement of field judgments thr	ised on additional reviews of test reports to justify the LDP in q ough review of design drawing/documentation; or pases which allowed reapplication of acceptance criteria for LD			
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Reg 3	gulatory Fire Barriers	1		
Inactive	No				
Functionally Equivalent	No				
Adequate for the Hazard	Yes				
Summary	Purpose:				
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.				
	Bases for Acceptability:				
	• The fire areas, fire zones and rooms on both sides of the barrier were identified,				
	• The construction of the boundary and the potential issue with the element in question was described,				
	The fire hazards and fire protection features on both sides of the barrier were described,				
		es equal to 3-hr boundaries were credited as such,			
Fire Safety Apolysis Data Man		Forlov	Pup: 09/19/2012 22:10 Page: 1752 of 242		

Fire Safety Analysis Data Manager (4.1)

Fire Area ID:2-040-U1 - Cable Spreading RoomEngineering EvaluationsCompliance Basis:NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptionsEngineering Evaluations

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

'}

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:10 Page: 1753 of 2430





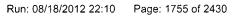
.

			Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions
Required FP System(s)/Feature(s) Description	Required By	Comments
Detection	2A-43	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-43	Risk Criteria	Required to meet risk criteria.
Detection	2A-43	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-43	EEEE/LA	Required to support a fire area boundary evaluation.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.

1

ļ

Fire Area ID: Compliance Basis:	2-040-U1 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-040-U1
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the installed detection system, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
Δ CDF	1.11E-09
ΔLERF	2.45E-12
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	\cdot







Fire Area ID: Compliance Basis:	2-040-U1 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U1-2-040-SEP-001		
VFDR	Q1P16V0592:CLOSED:CLOSED, SW TO D/G 2B - Q1P16V0592 - SW to D/G 2B. This normally closed, required closed valve provides unit separation by isolating the cross connect header to Unit 2. Unit 2 is using alternate shutdown procedure to shutdown with an assumed loss of offsite power. Unit 1 is using offsite power. Fire induced cable damage may result in cross connecting service water headers of both units support will disable shutdown of both units, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-2-040-SEP-002		
VFDR	Q1R16B0506:ENERGIZED:ENERGIZED-U1, 600V LOAD CENTER 1K/2K - Q1R16B0506 - 600V Load Center 1K/2K. This normally energized, required energized load center provides power to shared components for SW support. Unit 2 is using alternate shutdown procedure to shutdown with an assumed loss of offsite power. Unit 1 is using offsite power. Fire induced cable damage may result in loss of SW support and will disable shutdown of both units, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-2-040-SEP-003		
VFDR	Q1R16B0507:ENERGIZED:ENERGIZED-U1, 600V LOAD CENTER 1L/2L - Q1R16B0507 - 600V Load Center 1L/2L. This normally energized, required energized load center provides power to shared components for HVAC support in the SWIS building. Unit 2 is using alternate shutdown procedure to shutdown with an assumed loss of offsite power. Unit 1 is using offsite power. Fire induced cable damage may result in loss of SWIS HVAC support will disable shutdown of both units, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-2-040-SEP-004		
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1756 of 2430		

Fire Area ID: Compliance Basis:	2-040-U1 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q1R16B0508:ENERGIZED:ENERGIZED-U1, 600V LOAD CENTER 1R/2R - Q1R16B0508 - 600V Load Center 1R/2R. This normally energized, required energized load center provides power to shared components for SW support. Unit 2 is using alternate shutdown procedure to shutdown with an assumed loss of offsite power. Unit 1 is using offsite power. Fire induced cable damage may result in loss of SW support and will disable shutdown of both units, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-2-040-SEP-005	
VFDR	Q1R17B0505:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 1L - Q1R17B0505 - Motor Control Center 1L. This normally energized, required energized motor control center provides power to shared components for HVAC support in the SWIS building. Unit 2 is using alternate shutdown procedure to shutdown with an assumed loss of offsite power. Unit 1 is using offsite power. Fire induced cable damage may result in loss of SWIS HVAC support will disable shutdown of both units, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U1-2-040-SEP-006	
VFDR	Q1R17B0509:ENERGIZED:ENERGIZED-U1, MOTOR CONTROL CENTER 1S - Q1R17B0509 - Motor Control Center 1S. This normally energized, required energized motor control center provides power to shared components for SW support. Unit 2 is using alternate shutdown procedure to shutdown with an assumed loss of offsite power. Unit 1 is using offsite power. Fire induced cable damage may result in loss of SW support and will disable shutdown of both units, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	U1-2-040-SEP-007	





Fire Area ID: Compliance Basis:	2-040-U1 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1R43E0501A:AVAILABLE:AVAILABLE-SHED, SEQUENCER BUS 1H - Q1R43E0501A - Sequencer Bus 1H. This normally available, required available sequencer provides power to shared components for SW support. Unit 2 is using alternate shutdown procedure to shutdown with an assumed loss of offsite power. Unit 1 is using offsite power. Fire induced cable damage may result in loss of SW support and will disable shutdown of both units, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-2-040-SEP-008
VFDR	QSR17B0006:ENERGIZED:ENERGIZED-U1, MOTOR CONTROL CENTER 1F - QSR17B0006 - Motor Control Center 1F. The MCC is normally energized, required energized to provide control room HVAC. Fire induced cable damage can disable MCC, and a challenge to vital auxiliaries support for primary control station habitability for all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-2-040-SEP-009
VFDR	QSR17B0007:ENERGIZED:ENERGIZED-U1, MOTOR CONTROL CENTER 1G - QSR17B0007 - Motor Control Center 1G. The MCC is normally energized, required energized to provide control room HVAC. Fire induced cable damage can disable MCC, and a challenge to vital auxiliaries support for primary control station habitability for all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-2-040-SEP-010
	ų

Fire Safety Analysis Data Manager (4.1)

,

Fire Area ID: Compliance Basis:	2-040-U1 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	QSV49K0001A:STANDBY:ON, CONTROL ROOM PACKAGE A/C BLOWER UNIT A - QSV49K0001A - Control Room A/C Blower Unit A. The blower is normally in standby, required on to provide control room HVAC. Fire induced cable damage can disable blower, and a challenge to vital auxiliaries support for primary control station habitability for all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-2-040-SEP-011		
VFDR	QSV49K0001B:STANDBY:ON, CONTROL ROOM PACKAGE A/C BLOWER UNIT B - QSV49K0001B - Control Room A/C Blower Unit B. The blower is normally in standby, required on to provide control room HVAC. Fire induced cable damage can disable blower, and a challenge to vital auxiliaries support for primary control station habitability for all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).		
VFDR ID	U1-2-040-SEP-012		
VFDR	QSP16V0507:OPEN:OPEN, SW TO POND EAST HEADER ISOLATION - This valve or the wet pit discharge valve must be open to provide return path for service water. Fire induced circuit failure to valve QSP16V0507 and QSP16V0505 could result in spurious isolation of return line. This failure challenges the Vital Auxiliaries Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U1-2-040-SEP-013		
VFDR	QSP16V0508:OPEN:OPEN, SW TO POND EAST HEADER ISOLATION - This valve or the wet pit discharge valve must be open to provide return path for service water. Fire induced circuit failure to valve QSP16V0508 and QSP16V0506 could result in spurious isolation of return line. This failure challenges the Vital Auxiliaries Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		









Fire Area ID: Compliance Basis:	2-040-U1 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

.1

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assum	Fire Area Definitio
Fire Zone ID 2318-U2	Description 2318 Cable Spreading Room	
	· 1	
		1

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:10 Page: 1761 of 2430

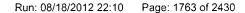


	Cable Spreading Room Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplif	ying deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Hot Shutdown Panel.	- - -	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room prior to Control Room evacuation.	.l	
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by {isolating the VCT / stopping the reactor makeup water pumps} to prevent boron dilution and by charging borated water from the RWST using {Train A charging pump / Train B charging pump / swing charging pump aligned to Train A / Train B power}.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train A charging pump or swing charging pump via Train A power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves. PZR PORV leakag paths are isolated using Train A PORV and Train B PORV. The RCS to RH high/low pressure interface is isolated using the Train A/Train B RHR inboa isolation valve.	R	
3.3 RCS Inventory Control - RCP Seal Integr	ity Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping al RCPs.CCW to RCP thermal barriers are isolated using the CCW to RCP thermal barrier isolation valve.	1	
4.1 RCS Pressure Control - Pressure Transi	ent Undesired depressurization due to inadvertent spray is prevented by ensuri the Loop 1 and Loop 2 RCPs are shut off.	ng	
4.2 RCS Pressure Control - Positive Pressur Control	Positive control of RCS pressure is accomplished with Train A PORV for pressure reduction and Pressurizer Heater Group B for pressure increase.	•	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train A MDAFW pu supplying Steam Generator 2A.	mp	
6 Process Monitoring	Essential processes are monitored by dedicated instruments at the hot shutdown panel.		

	-040-U2 - Cable Spreading Room IFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk	Performance Goals
Performance Goal	Method of Accomplishment	Comments
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by diesel generator EE kV and 600 V power is supplied by Train A/Train B di 125 VDC power and 120 VAC power is supplied by T equipment.	stribution equipment. 3.
7.2 Vital Auxiliaries – Service Wate	r Train A/Train B service water is provided with one se service recirculating to the pond and non-essential tu isolated.	
7.3 Vital Auxiliaries – Component (Water	Cooling Train A/Train B component cooling water is provided isolated.	with non-essential loads
7.4 Vital Auxiliaries – HVAC	Room cooling at essential locations is provided with I corresponding to the service water train.	HVAC equipment

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled. Initiation of the manual carbon dioxide suppression system will not damage components needed for safe shutdown; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.







Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Roor NFPA 805, Section 4.2.4.2 Perfor	m mance-Based Approach - Fire Risk Evaluation with simplifying dete	C Engineering Evaluations
Engineering Evaluation ID Revision	ENGDOC, SM-97-1561-001 Fire 1	Barrier Penetration Seal Limiting Design Parameter Evaluation	
Inactive	No		
Functionally Equivalent	No		
Adequate for the Hazard	Yes		
Summary	Purpose:	<i>,</i>	
		ls which, as a result of plant walkdowns of as built configurations, e sly established via qualification test reviews.	xhipited one or more Limiting Design Parameters (LDPs)
	Bases for Acceptability:		
	The basis of the evaluation was to	o establish the acceptability of the field established configurations the	nrough either:
	Refinement of field judgments the second secon	based on additional reviews of test reports to justify the LDP in ques hrough review of design drawing/documentation; or I bases which allowed reapplication of acceptance criteria for LDPs	
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Ro	egulatory Fire Barriers	-
Inactive	No		
Functionally Equivalent	No		
Adequate for the Hazard	Yes		
Summary	Purpose:		
	such as SWIS, RWIS and the Die	equivalency evaluations for several fire area boundaries in Units 1 a sel Generator Building. The approach was to examine any bounda lso included non-rated reach rod penetrations and separation betwo	ry for which there was not a documented/credited 3-hr
	Bases for Acceptability:		
	• The construction of the boundar	ooms on both sides of thé barrier were identified, ry and the potential issue with the element in question was describe tion features on both sides of the barrier were described,	d,
		ures equal to 3-hr boundaries were credited as such,	
Fire Safety Analysis Data Man	ager (4.1)	Farley	Run: 08/18/2012 22:10 Page: 1764 of 2430

 Fire Area ID:
 2-040-U2 - Cable Spreading Room
 Engineering Evaluations

 Compliance Basis:
 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
 Engineering Evaluations

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:10 Page: 1765 of 2430



	040-U2 - Cable Spreading Room FPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying determinist		Required Fire Protection Systems and Features valuation with simplifying deterministic assumptions
Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-43	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-43	Risk Criteria	Required to meet risk criteria.
Detection	2A-43	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-43	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-43	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Procedures / Guidance		DID Criteria	Improvements to procedures necessary to incorporate recovery actions required to mee DID criteria.
Modifications		Risk Criteria	Modification to install incipient detection, provide fuse or other elec. iso. device at the D0 shunt conn. pt. and replace trip device in pnl Q2R42B0001A, bkrs LA08 and LA13; pnl Q2R42B0001B, bkr LB02
Modifications		DID Criteria	Modification to provide fuse or other electrical isolation device at the DC shunt connection point and to plumb air from emergency air compressor header to AFW flow control valve.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-040-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with modification(s), specified recovery actions, and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	5.49E-08
Δ LERF	5.49E-08
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, recovery actions, modification to provide fuse or other electrical isolation device at the DC shunt connection point the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	

Farley

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-040-PCS-001
VFDR	N2P11V0901:MODULATED:CLOSED, SJAE BYPASS FCV - N2P11V0901 - SJAE BYPASS FCV. This normally closed, required closed valve. The valve is used to provide makeup to the condenser from the CST. If the condenser vacuum has not broken, then the CST can drain to the condenser hot well and prevent available source of inventory for use by AFW. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-002
VFDR	N2P11V0901:MODULATED:CLOSED, SJAE BYPASS FCV - N2P11V0901 - SJAE BYPASS FCV. This normally closed, required closed valve. The valve is used to provide makeup to the condenser from the CST. If the condenser vacuum has not broken, then the CST can drain to the condenser hot well and prevent available source of inventory for use by AFW. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-003
VFDR	N2P11V0902:MODULATED:CLOSED, GS CONDENSATE BYPASS FCV - N2P11V0902 - GS CONDENSATE BYPASS FCV. This normally closed, required closed valve. The valve is used to provide makeup to the condenser from the CST. If the condenser vacuum has not broken, then the CST can drain to the condenser hot well and prevent available source of inventory for use by AFW. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-2-040-PCS-004	
VFDR	N2P11V0902:MODULATED:CLOSED, GS CONDENSATE BYPASS FCV - N2P11V0902 - GS CONDENSATE BYPASS FCV. This normally closed, required closed valve. The valve is used to provide makeup to the condenser from the CST. If the condenser vacuum has not broken, then the CST can drain to the condenser hot well and prevent available source of inventory for use by AFW. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-005	
VFDR	N2P18V0073A:CLOSED:OPEN, EMERGENCY AIR HEADER ISOLATION TO A STEAM GENERATOR ATMOS RELIEF - N2P18V0073A - EMERGENCY AIR HEADER ISOLATION TO A STEAM GENERATOR ATMOS RELIEF. This normally closed, required open valve. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-006	
VFDR	N2P18V0073A:CLOSED:OPEN, EMERGENCY AIR HEADER ISOLATION TO A STEAM GENERATOR ATMOS RELIEF - N2P18V0073A - EMERGENCY AIR HEADER ISOLATION TO A STEAM GENERATOR ATMOS RELIEF. This normally closed, required open valve. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	

.





Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-2-040-PCS-007	
VFDR	N2P18V0074A:CLOSED:OPEN, EMERGENCY AIR SUPPLY VALVE TO A STEAM GENERATOR ATMOS RELIEF - N2P18V0074A - EMERGENCY AIR SUPPLY VALVE TO A STEAM GENERATOR ATMOS RELIEF. This normally closed, required open valve. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-008	
VFDR	N2P18V0074A:CLOSED:OPEN, EMERGENCY AIR SUPPLY VALVE TO A STEAM GENERATOR ATMOS RELIEF - N2P18V0074A - EMERGENCY AIR SUPPLY VALVE TO A STEAM GENERATOR ATMOS RELIEF. This normally closed, required open valve. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-009	
VFDR	N2P18V0106A:CLOSED:OPEN, EMERGENCY AIR SUPPLY VALVE TO TDAFW STEAM SUPPLY HV-3235A - N2P18V0106A - EMERGENCY AIR SUPPLY VALVE TO TDAFW STEAM SUPPLY STEAM SUPPLY HV-3235A. This normally closed, required open valve. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-2-040-PCS-010 +	
VFDR	N2P18V0106A:CLOSED:OPEN, EMERGENCY AIR SUPPLY VALVE TO TDAFW STEAM SUPPLY HV-3235A - N2P18V0106A - EMERGENCY AIR SUPPLY VALVE TO TDAFW STEAM SUPPLY HV-3235A. This normally closed, required open valve. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-011	
VFDR	N2P18V0106B:CLOSED:OPEN, EMERGENCY AIR SUPPLY VALVE TO TDAFW STEAM SUPPLY HV-3235B - N2P18V0106B - EMERGENCY AIR SUPPLY VALVE TO TDAFW STEAM SUPPLY HV-3235B. This normally closed, required open valve. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-012	
VFDR	N2P18V0106B:CLOSED:OPEN, EMERGENCY AIR SUPPLY VALVE TO TDAFW STEAM SUPPLY HV-3235B - N2P18V0106B - EMERGENCY AIR SUPPLY VALVE TO TDAFW TO TDAFW STEAM SUPPLY HV-3235B. This normally closed, required open valve. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	



Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
VFDR ID	U2-2-040-PCS-013	
VFDR	Q1P16V0592:CLOSED:CLOSED, SW TO D/G 2B - Q1P16V0592 - SW TO D/G 2B. This normally closed, required closed valve. The service water valve is required closed to prevent cross tying units service water systems. If the other unit service water loop is not available or in service may prevent adequate cooling of required cooling loads. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-014	
VFDR	Q1P16V0592:CLOSED:CLOSED, SW TO D/G 2B - Q1P16V0592 - SW TO D/G 2B. This normally closed, required closed valve. The service water valve i required closed to prevent cross tying units service water systems. If the other unit service water loop is not available or in service may prevent adequate cooling of required cooling loads. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a cha to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NI 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	llenge
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-015	
VFDR	Q1R16B0506:ENERGIZED:ENERGIZED-U2, 600V LOAD CENTER 1K/2K - Q1R16B0506 - 600V LOAD CENTER 1K/2K. This normally energized, requir energized load center. The load center is required to be energized to support service water system loads. Failure of service water system prevents sufficie cooling of required loads and impacts multiple system requiring its support. Fire induced damage to cables and loss of dc control power in the control room no controls on the PCS prevent ability to control load center, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	nt
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-016	
Fire Safety Analysis Data	a Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1772	of 2430

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performant	ce-Based Approach - Fire Risk Evaluation with simplifyi	ng deterministic assumptions	VFDR
VFDR	Q1R16B0506:ENERGIZED:ENERGIZED-U2, 600V LOAD CENTER 1K/2K - Q1R16B0506 - 600V LOAD CENTER 1K/2K. This normally energized, require energized load center. The load center is required to be energized to support service water system loads. Failure of service water system prevents sufficier cooling of required loads and impacts multiple system requiring its support. Fire induced damage to cables and loss of dc control power in the control room no controls on the PCS prevent ability to control load center, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		revents sufficient he control room and his condition	
Disposition		liance using the performance-based approach of NFPA safety margin criteria were satisfied without further actio		rmined that
VFDR ID	U2-2-040-PCS-017			
VFDR	energized, required energized transfor prevents sufficient cooling of required l the control room and no controls on the	ED, STATION SERVICE TRANSFORMER 2K - Q2R11 mer. The transformer is required to be energized to sup loads and impacts multiple system requiring its support. e PCS prevent ability to control load center, and a challe om the deterministic requirements of Section 4.2.3 of N h of NFPA 805, Section 4.2.4.	port service water system loads. Failure of se Fire induced damage to cables and loss of do enge to the Vital Auxiliaries Nuclear Safety Pe	rvice water system c control power in rformance Criteria.
Disposition		liance using the performance-based approach of NFPA safety margin criteria were satisfied without further actic		rmined that :'
VFDR ID	U2-2-040-PCS-018			
VFDR	energized, required energized transfor prevents sufficient cooling of required l the control room and no controls on the	ED, STATION SERVICE TRANSFORMER 2K - Q2R11 mer. The transformer is required to be energized to sup oads and impacts multiple system requiring its support. e PCS prevent ability to control load center, and a challe om the deterministic requirements of Section 4.2.3 of N h of NFPA 805, Section 4.2.4.	port service water system loads. Failure of se Fire induced damage to cables and loss of do enge to the Vital Auxiliaries Nuclear Safety Pe	rvice water system c control power in rformance Criteria.
Disposition		liance using the performance-based approach of NFPA safety margin criteria were satisfied without further actic		rmined that
VFDR ID	U2-2-040-PCS-019			
Fire Safety Analysis Data Mana	ager (4.1)	Farley	Run: 08/18/2012 22:10	Page: 1773 of 2430

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance	e-Based Approach - Fire Risk Evaluation with simplif	ying deterministic assumptions	VFDR
VFDR	Q1R16B0507:ENERGIZED:ENERGIZED-U2, 600V LOAD CENTER 1L/2L - Q1R16B0507 - 600V LOAD CENTER 1L/2L. This normally energized, requ energized load center. The load center is required to be energized to support service water system loads. Failure of service water system prevents suffic cooling of required loads and impacts multiple system requiring its support. Fire induced damage to cables and loss of dc control power in the control ro no controls on the PCS prevent ability to control load center, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		nts sufficient ontrol room and ondition	
Disposition		ance using the performance-based approach of NFF afety margin criteria were satisfied without further ac		ed that
VFDR ID	U2-2-040-PCS-020			
VFDR	energized load center. The load center cooling of required loads and impacts n no controls on the PCS prevent ability to represents a variance from the determin	R16B0507:ENERGIZED:ENERGIZED-U2, 600V LOAD CENTER 1L/2L - Q1R16B0507 - 600V LOAD CENTER 1L/2L. This normally energized, required irgized load center. The load center is required to be energized to support service water system loads. Failure of service water system prevents sufficient ling of required loads and impacts multiple system requiring its support. Fire induced damage to cables and loss of dc control power in the control room an controls on the PCS prevent ability to control load center, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition resents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the formance-based approach of NFPA 805, Section 4.2.4.		nts sufficient ontrol room and ondition
Disposition		This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		ed that
VFDR ID	U2-2-040-PCS-021		· · · · · · · · · · · · · · · · · · ·	
VFDR	Q2R11B0505:ENERGIZED:ENERGIZED, STATION SERVICE TRANSFORMER 2L - Q2R11B0505 - STATION SERVICE TRANSFORMER 2L. This e energized, required energized transformer. The transformer is required to be energized to support service water system loads. Failure of service water prevents sufficient cooling of required loads and impacts multiple system requiring its support. Fire induced damage to cables and loss of dc control por the control room and no controls on the PCS prevent ability to control load center, and a challenge to the Vital Auxiliaries Nuclear Safety Performance This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compli using the performance-based approach of NFPA 805, Section 4.2.4.		water system htrol power in nance Criteria.	
Disposition		ance using the performance-based approach of NFF afety margin criteria were satisfied without further ac		ed that
VFDR ID	U2-2-040-PCS-022	······································		
Fire Safety Analysis Data M	lanager (4.1)	Farley	Run: 08/18/2012 22:10 P	age: 1774 of 2430

Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance-	Based Approach - Fire Risk Evaluation with simplif	fying deterministic assumptions	VFDR
VFDR	energized, required energized transformer prevents sufficient cooling of required load the control room and no controls on the Pe This condition represents a variance from	505:ENERGIZED:ENERGIZED, STATION SERVICE TRANSFORMER 2L - Q2R11B0505 - STATION SERVICE TRANSFORMER 2L. This normally , required energized transformer. The transformer is required to be energized to support service water system loads. Failure of service water system sufficient cooling of required loads and impacts multiple system requiring its support. Fire induced damage to cables and loss of dc control power in I room and no controls on the PCS prevent ability to control load center, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. ition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance performance-based approach of NFPA 805, Section 4.2.4.		vice water system control power in formance Criteria.
Disposition		ce using the performance-based approach of NFF ety margin criteria were satisfied without further ac		mined that
VFDR ID	U2-2-040-PCS-023			
VFDR	required energized MCC. The motor contr sufficient cooling of required loads and im room and no controls on the PCS prevent	MOTOR CONTROL CENTER 1L - Q1R17B0505 ol center is required to be energized to support se pacts multiple system requiring its support. Fire in ability to control load center, and a challenge to th leterministic requirements of Section 4.2.3 of NFP 5, Section 4.2.4.	ervice water system loads. Failure of service water duced damage to cables and loss of dc control p ne Vital Auxiliaries Nuclear Safety Performance (ower in the control Criteria. This
Disposition		dition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that e risk, defense-in-depth, and safety margin criteria were satisfied without further action.		mined that
VFDR ID	U2-2-040-PCS-024		· · · · · · · · · · · · · · · · · · ·	
VFDR	required energized MCC. The motor contr sufficient cooling of required loads and imp room and no controls on the PCS prevent	MOTOR CONTROL CENTER 1L - Q1R17B0505 ol center is required to be energized to support se bacts multiple system requiring its support. Fire in ability to control load center, and a challenge to the eterministic requirements of Section 4.2.3 of NFP 5, Section 4.2.4.	ervice water system loads. Failure of service water duced damage to cables and loss of dc control p ne Vital Auxiliaries Nuclear Safety Performance C	er system prevents ower in the control Criteria. This
Disposition	This condition was evaluated for complian applicable risk, defense-in-depth, and safe	ce using the performance-based approach of NFF ety margin criteria were satisfied without further ac	PA 805, Section 4.2.4. A fire risk evaluation deter tion.	mined that
VFDR ID	U2-2-040-PCS-025			
Fire Safety Analysis Data M	lanager (4.1)	Farley	Run: 08/18/2012 22:10	Page: 1775 of 2430



Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q1R17B0509:ENERGIZED:ENERGIZED-U2, MOTOR CONTROL CENTER 1S - Q1R17B0509 - MOTOR CONTROL CENTER 1S. This normally energized, required energized MCC. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-026	
VFDR	Q1R17B0509:ENERGIZED:ENERGIZED-U2, MOTOR CONTROL CENTER 1S - Q1R17B0509 - MOTOR CONTROL CENTER 1S. This normally energized, required energized MCC. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-027	
VFDR	Q2B13HV0003:OPEN:OPEN/CLOSED-HSP, REACTOR VESSEL HEAD VENT - Q2B13HV0003 - REACTOR VESSEL HEAD VENT. This normally open, required closed valve. The head vent is required to be isolated to prevent uncontrolled RCS inventory losses. Fire induced damage to cables are not isolated from the control room for operation at the PCS, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
· ·		
VFDR ID	U2-2-040-PCS-028	
VFDR	Q2B13HV0003:OPEN:OPEN/CLOSED-HSP, REACTOR VESSEL HEAD VENT - Q2B13HV0003 - REACTOR VESSEL HEAD VENT. This normally open, required closed valve. The head vent is required to be isolated to prevent uncontrolled RCS inventory losses. Fire induced damage to cables are not isolated from the control room for operation at the PCS, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-029	
VFDR	Q2B13HV0004:OPEN:OPEN/CLOSED-HSP, REACTOR VESSEL HEAD VENT - Q2B13HV0004 - REACTOR VESSEL HEAD VENT. This normally open, required closed valve. The head vent is required to be isolated to prevent uncontrolled RCS inventory losses. Fire induced damage to cables are not isolated from the control room for operation at the PCS, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-030	
VFDR	Q2B13HV0004:OPEN:OPEN/CLOSED-HSP, REACTOR VESSEL HEAD VENT - Q2B13HV0004 - REACTOR VESSEL HEAD VENT. This normally open, required closed valve. The head vent is required to be isolated to prevent uncontrolled RCS inventory losses. Fire induced damage to cables are not isolated from the control room for operation at the PCS, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-031	
VFDR	Q2B31V0027B:OPEN:OPEN/CLOSED-HSPB, PORV BLOCK VALVE - Q2B31V0027B - PORV BLOCK VALVE. This normally open, required closed valve. The PORV line is required to be isolated to prevent uncontrolled RCS inventory losses and pressure transients. Fire induced damage to cables are not isolated from the control room for operation at the PCS, and a challenge to the Inventory and Pressure control Nuclear Safety Performance Criteria. This condition represent a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	





Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR;not modeled in Fire PRA).
	<u>.</u>
VFDR ID	U2-2-040-PCS-032
VFDR	Q2B31V0027B:OPEN:OPEN/CLOSED-HSPB, PORV BLOCK VALVE - Q2B31V0027B - PORV BLOCK VALVE. This normally open, required closed valve. The PORV line is required to be isolated to prevent uncontrolled RCS inventory losses and pressure transients. Fire induced damage to cables are not isolated from the control room for operation at the PCS, and a challenge to the Inventory and Pressure control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-033
VFDR	Q2C11E0004A:CLOSED:OPEN, REACTOR TRIP SWITCHGEAR 1 - Q2C11E0004A - REACTOR TRIP SWITCHGEAR 1. This normally closed, required open breaker. The reactor trip is tripped in the Control Room not the PCS and is required to be verified outside of the control room. This provides assurance that credited action in control has taken place. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to verify reactor trip has occurred, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-034
VFDR	Q2C11E0004A:CLOSED:OPEN, REACTOR TRIP SWITCHGEAR 1 - Q2C11E0004A - REACTOR TRIP SWITCHGEAR 1. This normally closed, required open breaker. The reactor trip is tripped in the Control Room not the PCS and is required to be verified outside of the control room. This provides assurance that credited action in control has taken place. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to verify reactor trip has occurred, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-035
VFDR	Q2C11E0004B:CLOSED:OPEN, REACTOR TRIP SWITCHGEAR 2 - Q2C11E0004B - REACTOR TRIP SWITCHGEAR 2. This normally closed, required open breaker. The reactor trip is tripped in the Control Room not the PCS and is required to be verified outside of the control room. This provides assurance that credited action in control has taken place. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to verify reactor trip has occurred, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID .	U2-2-040-PCS-036
VFDR	Q2C11E0004B:CLOSED:OPEN, REACTOR TRIP SWITCHGEAR 2 - Q2C11E0004B - REACTOR TRIP SWITCHGEAR 2. This normally closed, required open breaker. The reactor trip is tripped in the Control Room not the PCS and is required to be verified outside of the control room. This provides assurance that credited action in control has taken place. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to verify reactor trip has occurred, and a challenge to the Reactivity Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-037
VFDR	Q2E11V0001A:CLOSED:CLOSED, 2C RCS LOOP TO 2A RHR PUMP - Q2E11V0001A - 2C RCS LOOP TO 2A RHR PUMP. This normally closed, required closed valve. The RHR pump suction valve is a high low pressure interface required to be closed. If both valve open potential interfacing LOCA. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Attachment C	
Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02	Table B-3)

-

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR:not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-038	
VFDR	Q2E11V0001B:CLOSED:CLOSED, 2A RCS LOOP TO 2B RHR PUMP - Q2E11V0001B - 2A RCS LOOP TO 2B RHR PUMP. This normally closed, required closed valve. The RHR pump suction valve is a high low pressure interface required to be closed. If both valve open potential interfacing LOCA. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-039	
VFDR	Q2E11V0016A:CLOSED:CLOSED, 2C RCS LOOP TO 2A RHR PUMP - Q2E11V0016A - 2C RCS LOOP TO 2A RHR PUMP. This normally closed, required closed valve. The RHR pump suction valve is a high low pressure interface required to be closed. If both valve open potential interfacing LOCA. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nucle Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-040	
VFDR	Q2E11V0016B:CLOSED:CLOSED, 2A RCS LOOP TO 2B RHR PUMP - Q2E11V0016B - 2A RCS LOOP TO 2B RHR PUMP. This normally closed, required closed valve. The RHR pump suction valve is a high low pressure interface required to be closed. If both valve open potential interfacing LOCA. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-041	
VFDR	Q2E11V0025B:CLOSED:CLOSED, CONTAINMENT SUMP TO 2B RHR PUMP (INSIDE ENCAPSULATION) - Q2E11V0025B - CONTAINMENT SUMP TO 2B RHR PUMP (INSIDE ENCAPSULATION). This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-042	
VFDR	Q2E11V0025B:CLOSED:CLOSED, CONTAINMENT SUMP TO 2B RHR PUMP (INSIDE ENCAPSULATION) - Q2E11V0025B - CONTAINMENT SUMP TO 2 RHR PUMP (INSIDE ENCAPSULATION). This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-043	
VFDR	Q2E11V0026B:CLOSED:CLOSED, CONTAINMENT SUMP TO 2B RHR PUMP - Q2E11V0026B - CONTAINMENT SUMP TO 2B RHR PUMP. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	



Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room VFDRs NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-044
VFDR	Q2E11V0026B:CLOSED:CLOSED, CONTAINMENT SUMP TO 2B RHR PUMP - Q2E11V0026B - CONTAINMENT SUMP TO 2B RHR PUMP. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-045
VFDR	Q2E13V0003A:CLOSED:CLOSED, 2A CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0003A - 2A CS PUMP CONTAINMENT SUMP SUCTION ISOLATION. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-046
VFDR	Q2E13V0003A:CLOSED:CLOSED, 2A CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0003A - 2A CS PUMP CONTAINMENT SUMP SUCTION ISOLATION. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

x

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-047	
VFDR	Q2E13V0003B:CLOSED:CLOSED, 2B CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0003B - 2B CS PUMP CONTAINMENT SUMP SUCTION ISOLATION. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-048	
VFDR	Q2E13V0003B:CLOSED:CLOSED, 2B CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0003B - 2B CS PUMP CONTAINMENT SUMP SUCTION ISOLATION. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the P prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-049	
VFDR	Q2E13V0004A:CLOSED:CLOSED, 2A CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0004A - 2A CS PUMP CONTAINMENT SUMP SUCTION ISOLATION. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

Run: 08/18/2012 22:10 Page: 1783 of 2430



Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-050	
VFDR	Q2E13V0004A:CLOSED:CLOSED, 2A CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0004A - 2A CS PUMP CONTAINMENT SUMP SUCTION ISOLATION. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-051	
VFDR	Q2E13V0004B:CLOSED:CLOSED, 2B CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0004B - 2B CS PUMP CONTAINMENT SUMP SUCTION ISOLATION. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-052	
VFDR	Q2E13V0004B:CLOSED:CLOSED, 2B CS PUMP CONTAINMENT SUMP SUCTION ISOLATION - Q2E13V0004B - 2B CS PUMP CONTAINMENT SUMP SUCTION ISOLATION. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-053
VFDR	Q2E16H0001A:STANDBY:ON, CHARGING/HHSI PUMP ROOM COOLER 2A - Q2E16H0001A - CHARGING/HHSI PUMP ROOM COOLER 2A. This normally standby, required on cooler. The cooler is required to support charging pump. Failure of charging pump can disable to ability to use the RWST inventory to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control cooler, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-054
VFDR	Q2E16H0001A:STANDBY:ON, CHARGING/HHSI PUMP ROOM COOLER 2A - Q2E16H0001A - CHARGING/HHSI PUMP ROOM COOLER 2A. This normally standby, required on cooler. The cooler is required to support charging pump. Failure of charging pump can disable to ability to use the RWST inventory to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control cooler, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-055
VFDR	Q2E16H0001B:STANDBY:ON-TRAIN A, CHARGING/HHSI PUMP ROOM COOLER 2B - Q2E16H0001B - CHARGING/HHSI PUMP ROOM COOLER 2B. This normally standby, required on cooler. The cooler is required to support charging pump. Failure of charging pump can disable to ability to use the RWST inventory to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control cooler, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Safety Analysis Data Manager (4.1)





.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-056
VFDR	Q2E16H0001B:STANDBY:ON-TRAIN B, CHARGING/HHSI PUMP ROOM COOLER 2B - Q2E16H0001B - CHARGING/HHSI PUMP ROOM COOLER 2B. This normally standby, required on cooler. The cooler is required to support charging pump. Failure of charging pump can disable to ability to use the RWST inventory to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control cooler, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-057
VFDR	Q2E16H0001C:STANDBY:ON, CHARGING/HHSI PUMP ROOM COOLER 2C - Q2E16H0001C - CHARGING/HHSI PUMP ROOM COOLER 2C. This normally standby, required on cooler. The cooler is required to support charging pump. Failure of charging pump can disable to ability to use the RWST inventory to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control cooler, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-058
VFDR	Q2E16H0005A:STANDBY:ON, 2A AFW PUMP ROOM COOLER - Q2E16H0005A - 2A AFW PUMP ROOM COOLER. This normally standby, required on cooler. The cooler is required to support AFW pump. Failure of AFW pump can disable to ability to control steam generator for Decay Heat Removal. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control cooler, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-059	
VFDR	Q2E16H0005A:STANDBY:ON, 2A AFW PUMP ROOM COOLER - Q2E16H0005A - 2A AFW PUMP ROOM COOLER. This normally standby, required on cooler. The cooler is required to support AFW pump. Failure of AFW pump can disable to ability to control steam generator for Decay Heat Removal. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control cooler, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-060	
VFDR	Q2E21V0063:CLOSED:CLOSED, CHARGING PUMP RECIRC TO RCS COLD LEGS - Q2E21V0063 - CHARGING PUMP RECIRC TO RCS COLD LEGS This normally closed, required closed valve. The recirc to RCS cold leg is not credited for RCS makeup. Valve is required close to prevent pump run out an uncontrolled RCS makeup. Fire induced damage to cables, spurious ESFAS and loss of control power in the control room and no controls on the PCS prev ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance fro the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-061	
VFDR	Q2E21V0063:CLOSED:CLOSED, CHARGING PUMP RECIRC TO RCS COLD LEGS - Q2E21V0063 - CHARGING PUMP RECIRC TO RCS COLD LEGS. This normally closed, required closed valve. The recirc to RCS cold leg is not credited for RCS makeup. Valve is required close to prevent pump run out and uncontrolled RCS makeup. Fire induced damage to cables, spurious ESFAS and loss of control power in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	



Attachment C	, I - 1
Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Ta	uble B-3)

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-062
VFDR	Q2E21V0134B:OPEN:OPEN/CLOSED, CHARGING FLOW REGULATOR INLET - Q2E21V0134B - CHARGING FLOW REGULATOR INLET. This normally open, required closed valve. The charging flow control valve is not available. Manual flow control is used. Fire induced damage to cables and spurious ESFAS in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-063
VFDR	Q2E21V0134B:OPEN:OPEN/CLOSED, CHARGING FLOW REGULATOR INLET - Q2E21V0134B - CHARGING FLOW REGULATOR INLET. This normally open, required closed valve. The charging flow control valve is not available. Manual flow control is used. Fire induced damage to cables and spurious ESFAS in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-064
VFDR	Q2E21V0135:CLOSED:OPEN/CLOSED, CHARGING FLOW REGULATOR BYPASS - Q2E21V0135 - CHARGING FLOW REGULATOR BYPASS. This normally closed, required open valve. The charging flow control valve is not available. Manual flow control is used. Fire induced damage to cables and spurious ESFAS in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room VFDR: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-065
VFDR	Q2E21V0135:CLOSED:OPEN/CLOSED, CHARGING FLOW REGULATOR BYPASS - Q2E21V0135 - CHARGING FLOW REGULATOR BYPASS. This normally closed, required open valve. The charging flow control valve is not available. Manual flow control is used. Fire induced damage to cables and spurious ESFAS in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-066
VFDR	Q2E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - Q2E21V0244 - RCS NORMAL CHARGING LINE. This normally open, required modulated valve. The charging flow control valve is not available. Manual flow control is used. Fire induced damage to cables and spurious ESFAS in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-067
VFDR	Q2E21V0244:OPEN:MODULATE, RCS NORMAL CHARGING LINE - Q2E21V0244 - RCS NORMAL CHARGING LINE. This normally open, required modulated valve. The charging flow control valve is not available. Manual flow control is used. Fire induced damage to cables and spurious ESFAS in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

٠

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-068
VFDR	Q2E21V0245:CLOSED:CLOSED, RCS PRESSURIZER AUX SPRAY - Q2E21V0245 - RCS PRESSURIZER AUX SPRAY. This normally closed, required closed valve. The auxiliary spray line is required to be isolated to prevent uncontrolled pressure transient. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-069
VFDR	Q2E21V0245:CLOSED:CLOSED, RCS PRESSURIZER AUX SPRAY - Q2E21V0245 - RCS PRESSURIZER AUX SPRAY. This normally closed, required closed valve. The auxiliary spray line is required to be isolated to prevent uncontrolled pressure transient. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-070
VFDR	Q2E21V0259A:OPEN:OPEN, 2A CHARGING PUMP MINIFLOW ISOLATION - Q2E21V0259A - 2A CHARGING PUMP MINIFLOW ISOLATION. This normally open, required open valve. The charging minimum flow line is required to be available to prevent pump damage. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-071
VFDR	Q2E21V0259B:OPEN:OPEN, 2B CHARGING PUMP MINIFLOW ISOLATION - Q2E21V0259B - 2B CHARGING PUMP MINIFLOW ISOLATION. This normally open, required open valve. The charging minimum flow line is required to be available to prevent pump damage. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-072
VFDR	Q2E21V0259B:OPEN:OPEN, 2B CHARGING PUMP MINIFLOW ISOLATION - Q2E21V0259B - 2B CHARGING PUMP MINIFLOW ISOLATION. This normally open, required open valve. The charging minimum flow line is required to be available to prevent pump damage. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-073
VFDR	Q2E21V0259C:OPEN:OPEN, 2C CHARGING PUMP MINIFLOW ISOLATION - Q2E21V0259C - 2C CHARGING PUMP MINIFLOW ISOLATION. This normally open, required open valve. The charging minimum flow line is required to be available to prevent pump damage. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.





Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-074
VFDR	Q2E21V0265:OPEN:OPEN, CHARGING PUMPS MINIFLOW ISOLATION - Q2E21V0265 - CHARGING PUMPS MINIFLOW ISOLATION. This normally open, required open valve. The charging minimum flow line is required to be available to prevent pump damage. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-075
VFDR	Q2E21V0265:OPEN:OPEN, CHARGING PUMPS MINIFLOW ISOLATION - Q2E21V0265 - CHARGING PUMPS MINIFLOW ISOLATION. This normally open, required open valve. The charging minimum flow line is required to be available to prevent pump damage. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-076
VFDR	Q2E21V0376A:OPEN:CLOSED, VCT OUTLET ISOLATION - Q2E21V0376A - VCT OUTLET ISOLATION. This normally open, required closed valve. The VCT outlet valve is required to be closed to prevent gas binding of the charging pumps. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-077
VFDR	Q2E21V0376A:OPEN:CLOSED, VCT OUTLET ISOLATION - Q2E21V0376A - VCT OUTLET ISOLATION. This normally open, required closed valve. The VCT outlet valve is required to be closed to prevent gas binding of the charging pumps. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-078
VFDR	Q2E21V0606:CLOSED:OPEN/CLOSED, CHARGING FLOW REGULATOR BYPASS - Q2E21V0606 - CHARGING FLOW REGULATOR BYPASS. This normally closed, required open valve. The charging flow control valve is not available. Manual flow control is used. Fire induced damage to cables and spurious ESFAS in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-079
VFDR	Q2E21V0606:CLOSED:OPEN/CLOSED, CHARGING FLOW REGULATOR BYPASS - Q2E21V0606 - CHARGING FLOW REGULATOR BYPASS. This normally closed, required open valve. The charging flow control valve is not available. Manual flow control is used. Fire induced damage to cables and spurious ESFAS in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

.

Run: 08/18/2012 22:10 Page: 1793 of 2430

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room VFDRs NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-080
VFDR	N2F16LI4075A:AVAILABLE:AVAILABLE, RWST LEVEL INDICATOR LI-4075A - N2F16LI4075A - RWST LEVEL INDICATOR LI-4075A. This normally available, required available indicator. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level, if RWST level is indeterminate operators would have inadequate instrumentation to determine proper actions. Fire induced damage to cables prevent available indication in the control room and indication is not available on the PCS, and a challenge to the Reactivity Control and RCS Pressure and Inventory Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-081
VFDR	N2F16LI4075A:AVAILABLE:AVAILABLE, RWST LEVEL INDICATOR LI-4075A - N2F16LI4075A - RWST LEVEL INDICATOR LI-4075A. This normally available, required available indicator. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level, if RWST level is indeterminate operators would have inadequate instrumentation to determine proper actions. Fire induced damage to cables prevent available indication in the control room and indication is not available on the PCS, and a challenge to the Reactivity Control and RCS Pressure and Inventory Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-082
VFDR	Q2N11V0003A:CLOSED:CLOSED, 2A SG MSIV BYPASS - Q2N11V0003A - 2A SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-083
VFDR	Q2N11V0003A:CLOSED:CLOSED, 2A SG MSIV BYPASS - Q2N11V0003A - 2A SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-084
VFDR	Q2N11V0003B:CLOSED:CLOSED, 2B SG MSIV BYPASS - Q2N11V0003B - 2B SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-085
VFDR	Q2N11V0003B:CLOSED:CLOSED, 2B SG MSIV BYPASS - Q2N11V0003B - 2B SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.



Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-086
VFDR	Q2N11V0003C:CLOSED:CLOSED, 2C SG MSIV BYPASS - Q2N11V0003C - 2C SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-087
VFDR	Q2N11V0003C:CLOSED:CLOSED, 2C SG MSIV BYPASS - Q2N11V0003C - 2C SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-088
VFDR	Q2N11V0003D:CLOSED:CLOSED, 2A SG MSIV BYPASS - Q2N11V0003D - 2A SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-089
VFDR	Q2N11V0003D:CLOSED:CLOSED, 2A SG MSIV BYPASS - Q2N11V0003D - 2A SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-090
VFDR	Q2N11V0003E:CLOSED:CLOSED, 2B SG MSIV BYPASS - Q2N11V0003E - 2B SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-091
VFDR	Q2N11V0003E:CLOSED:CLOSED, 2B SG MSIV BYPASS - Q2N11V0003E - 2B SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

-

:

.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-092
VFDR	Q2N11V0003F:CLOSED:CLOSED, 2C SG MSIV BYPASS - Q2N11V0003F - 2C SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-093
VFDR	Q2N11V0003F:CLOSED:CLOSED, 2C SG MSIV BYPASS - Q2N11V0003F - 2C SG MSIV BYPASS. This normally closed, required closed valve. The MSIVs and bypass valves are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-094
VFDR	Q2N23V0013A:CLOSED:OPEN, MDAFWP SW SUPPLY - Q2N23V0013A - MDAFWP SW SUPPLY. This normally closed, required open valve. The AFW pump initial suction source is the CST, long term suction will be aligned to service water system. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room VFDRs VFDRs VFDRs VFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-095
VFDR	Q2N23V0013A:CLOSED:OPEN, MDAFWP SW SUPPLY - Q2N23V0013A - MDAFWP SW SUPPLY. This normally closed, required open valve. The AFW pump initial suction source is the CST, long term suction will be aligned to service water system. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-096
VFDR	Q2N23V0014A:CLOSED:OPEN, MDAFWP SW SUPPLY - Q2N23V0014A - MDAFWP SW SUPPLY. This normally closed, required open valve. The AFW pump initial suction source is the CST, long term suction will be aligned to service water system. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-097
VFDR	Q2N23V0014A:CLOSED:OPEN, MDAFWP SW SUPPLY - Q2N23V0014A - MDAFWP SW SUPPLY. This normally closed, required open valve. The AFW pump initial suction source is the CST, long term suction will be aligned to service water system. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

.







Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-098
VFDR	Q2N23V0025A:OPEN:OPEN, MDAFWP TO 2A STEAM GENERATOR ISOLATION - Q2N23V0025A - MDAFWP TO 2A STEAM GENERATOR ISOLATION. This normally open, required open valve. The AFW valve is required to be open to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition _.	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-099
VFDR	Q2N23V0025A:OPEN:OPEN, MDAFWP TO 2A STEAM GENERATOR ISOLATION - Q2N23V0025A - MDAFWP TO 2A STEAM GENERATOR ISOLATION. This normally open, required open valve. The AFW valve is required to be open to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-100
VFDR	Q2N23V0025E:OPEN:OPEN, MDAFWP TO 2A STEAM GENERATOR ISOLATION - Q2N23V0025E - MDAFWP TO 2A STEAM GENERATOR ISOLATION. This normally open, required open valve. The AFW valve is required to be open to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined to applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-101			
VFDR	Q2N23V0025E:OPEN:OPEN, MDAFWP TO 2A STEAM GENERATOR ISOLATION - Q2N23V0025E - MDAFWP TO 2A STEAM GENERATOR ISOLATION. This normally open, required open valve. The AFW valve is required to be open to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that able risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-102			
VFDR	Q2P16FV3009B:OPEN:OPEN, SW FROM 2B CCW HX - Q2P16FV3009B - SW FROM 2B CCW HX. This normally open, required open valve. The service water valve is required open to supply the CCW heat exchanger. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-103			
VFDR	Q2P16FV3009B:OPEN:OPEN, SW FROM 2B CCW HX - Q2P16FV3009B - SW FROM 2B CCW HX. This normally open, required open valve. The service water valve is required open to supply the CCW heat exchanger. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Sectior 4.2.4.			





Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-104			
VFDR	Q2P16FV3009C:OPEN:OPEN, SW FROM 2C CCW HX - Q2P16FV3009C - SW FROM 2C CCW HX. This normally open, required open valve. The service water valve is required open to supply the CCW heat exchanger. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk; defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-105			
VFDR	Q2P16FV3009C:OPEN:OPEN, SW FROM 2C CCW HX - Q2P16FV3009C - SW FROM 2C CCW HX. This normally open, required open valve. The service water valve is required open to supply the CCW heat exchanger. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-106			
VFDR	Q2P16P0001A:STANDBY:ON, 2A SERVICE WATER PUMP - Q2P16P0001A - 2A SERVICE WATER PUMP. This normally standby, required on pump. Th service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prev ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the determinis requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Sect 4.2.4.			

.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-107		
VFDR	Q2P16P0001A:STANDBY:ON, 2A SERVICE WATER PUMP - Q2P16P0001A - 2A SERVICE WATER PUMP. This normally standby, required on pump. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-108		
VFDR	Q2P16P0001B:STANDBY:ON, 2B SERVICE WATER PUMP - Q2P16P0001B - 2B SERVICE WATER PUMP. This normally standby, required on pump. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-109		
VFDR	Q2P16P0001B:STANDBY:ON, 2B SERVICE WATER PUMP - Q2P16P0001B - 2B SERVICE WATER PUMP. This normally standby, required on pump. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		

1





Attachment C	It.
Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Tab	ole B-3)

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined tha applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-110			
VFDR	Q2P16P0001C:STANDBY:ON, 2C SERVICE WATER PUMP - Q2P16P0001C - 2C SERVICE WATER,PUMP. This normally standby, required on pump. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-111			
VFDR	Q2P16P0001C:STANDBY:ON, 2C SERVICE WATER PUMP - Q2P16P0001C - 2C SERVICE WATER PUMP. This normally standby, required on pump. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-112			
VFDR	Q2P16P0001D:STANDBY:ON, 2D SERVICE WATER PUMP - Q2P16P0001D - 2D SERVICE WATER PUMP. This normally standby, required on pump service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS p ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the determ requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, 5 4.2.4.			

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-113	
VFDR	Q2P16P0001D:STANDBY:ON, 2D SERVICE WATER PUMP - Q2P16P0001D - 2D SERVICE WATER PUMP. This normally standby, required on pump. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-114	
VFDR	Q2P16P0001E:STANDBY:ON, 2E SERVICE WATER PUMP - Q2P16P0001E 2E SERVICE WATER PUMP. This normally standby, required on pump. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-115	
VFDR	Q2P16P0001E:STANDBY:ON, 2E SERVICE WATER PUMP - Q2P16P0001E - 2E SERVICE WATER PUMP. This normally standby, required on pump. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS preven ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Sectior 4.2.4.	

|--|--|--|

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined tha applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-116		
VFDR	Q2P16V0001A:OPEN:OPEN, SW TO AUX BLDG A HEADER ISOLATION - Q2P16V0001A - SW TO AUX BLDG A HEADER ISOLATION. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-117		
VFDR	Q2P16V0001A:OPEN:OPEN, SW TO AUX BLDG A HEADER ISOLATION - Q2P16V0001A - SW TO AUX BLDG A HEADER ISOLATION. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-118		
VFDR	Q2P16V0001B:OPEN:OPEN, SW TO AUX BLDG B HEADER ISOLATION - Q2P16V0001B - SW TO AUX BLDG B HEADER ISOLATION. This normally oper required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-119		
VFDR	Q2P16V0001B:OPEN:OPEN, SW TO AUX BLDG B HEADER ISOLATION - Q2P16V0001B - SW TO AUX BLDG B HEADER ISOLATION. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-120		
VFDR	Q2P16V0003B:OPEN:OPEN, SW TO 2B CCW HX - Q2P16V0003B - SW TO 2B CCW HX. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-121		
VFDR	Q2P16V0003B:OPEN;OPEN, SW TO 2B CCW HX - Q2P16V0003B - SW TO 2B CCW HX. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		









Fire Area ID: 2-040-U2 - Cable Spreading Room Compliance Basis: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR ID	U2-2-040-PCS-122	
VFDR	Q2P16V0003C:OPEN:OPEN, SW TO 2C CCW HX - Q2P16V0003C - SW TO 2C CCW HX. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-123	
VFDR	Q2P16V0003C:OPEN:OPEN, SW TO 2C CCW HX - Q2P16V0003C - SW TO 2C CCW HX. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-124	
VFDR	Q2P16V0506:STANDBY:CLOSED, 2C SW PUMP TO SW HEADER B - Q2P16V0506 - 2C SW PUMP TO SW HEADER B. This normally standby, required closed valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-125	

Fire Area ID: 2-040-U2 - Cable Spreading F Compliance Basis: NFPA 805, Section 4.2.4.2 Pe		able Spreading Room ection 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	closed valve. The service water system the PCS prevent ability to control valve	LOSED, 2C SW PUMP TO SW HEADER B - Q2P16V0506 - 2C SW PUMP TO SW HEADER B. This normally standby, required rater system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on ontrol valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from nts of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of		
Disposition		uated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that -in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-126			
VFDR	valve. The service water system is requered PCS prevent ability to control valve, an	TANDBY:OPEN, 2C SW PUMP TO SW HEADER B - Q2P16V0506 - 2C SW PUMP TO SW HEADER B. This normally standby, required open ice water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the oility to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the quirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 2.4.		
Disposition	This condition was evaluated for complaphicable risk, defense-in-depth, and s	s evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that fense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-127			
VFDR	Q2P16V0506:STANDBY:OPEN, 2C SW PUMP TO SW HEADER B - Q2P16V0506 - 2C SW PUMP TO SW HEADER B. This normally standby, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition		as evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-128			
Fire Safety Analysis Data M	anager (4.1)	Farley	Run: 08/18/2012 22:10	Page: 1809 of 2430



Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room sis: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2P16V0507:STANDBY:CLOSED, 2C SW PUMP TO SW HEADER A - Q2P16V0507 - 2C SW PUMP TO SW HEADER A. This normally standby, required closed valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance fro the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-129		
VFDR	Q2P16V0507:STANDBY:CLOSED, 2C SW PUMP TO SW HEADER A - Q2P16V0507 - 2C SW PUMP TO SW HEADER A. This normally standby, required closed valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-130		
VFDR	Q2P16V0507:STANDBY:OPEN, 2C SW PUMP TO SW HEADER A - Q2P16V0507 - 2C SW PUMP TO SW HEADER A. This normally standby, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
	U2-2-040-PCS-131		

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2P16V0507:STANDBY:OPEN, 2C SW PUMP TO SW HEADER A - Q2P16V0507 - 2C SW PUMP TO SW HEADER A. This normally standby, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-132
VFDR	Q2P16V0508:OPEN:OPEN, SW HEADER DISCHARGE TRAIN B - Q2P16V0508 - SW HEADER DISCHARGE TRAIN B. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-040-PCS-133
VFDR	Q2P16V0508:OPEN:OPEN, SW HEADER DISCHARGE TRAIN B - Q2P16V0508 - SW HEADER DISCHARGE TRAIN B. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-134
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1811 of 243



Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2P16V0511:OPEN:OPEN, SW HEADER DISCHARGE TRAIN A - Q2P16V0511 - SW HEADER DISCHARGE TRAIN A. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-135
VFDR	Q2P16V0511:OPEN:OPEN, SW HEADER DISCHARGE TRAIN A - Q2P16V0511 - SW HEADER DISCHARGE TRAIN A. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-136
VFDR	Q2P16V0518:OPEN:OPEN, SW TO DB TRAIN B - Q2P16V0518 - SW TO DB TRAIN B. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.

.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2P16V0518:OPEN:OPEN, SW TO DB TRAIN B - Q2P16V0518 - SW TO DB TRAIN B. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-138
VFDR	Q2P16V0536:OPEN:OPEN, SW FROM DB TRAIN A - Q2P16V0519 - SW TO DB TRAIN A. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-139
VFDR	Q2P16V0536:OPEN:OPEN, SW FROM DB TRAIN A - Q2P16V0519 - SW TO DB TRAIN A. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-140





Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2P16V0545:OPEN:OPEN/CLOSED, TRAIN B SW DISCHARGE TO RIVER - Q2P16V0545 - TRAIN B SW DISCHARGE TO RIVER. This normally closed, required closed valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-141
VFDR	Q2P16V0545:OPEN:OPEN/CLOSED, TRAIN B SW DISCHARGE TO RIVER - Q2P16V0545 - TRAIN B SW DISCHARGE TO RIVER. This normally closed, required closed valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-142
VFDR	Q2P16V0592:OPEN:OPEN, DG 2B U2 SW INLET - Q2P16V0592 - DG 2B U2 SW INLET. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-143

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room VFDR NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2P16V0592:OPEN:OPEN, DG 2B U2 SW INLET - Q2P16V0592 - DG 2B U2 SW INLET. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition .	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-144
VFDR	Q2P16V0593:OPEN:OPEN, DG 2B U2 SW OUTLET - Q2P16V0593 - DG 2B U2 SW OUTLET. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-145
VFDR	Q2P16V0593:OPEN:OPEN, DG 2B U2 SW OUTLET - Q2P16V0593 - DG 2B U2 SW OUTLET. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-146



3

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2P17V0082:OPEN:CLOSED, CCW TO RCP COOLERS - Q2P17V0082 - CCW TO RCP COOLERS. This normally open, required close valve. The CCW system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-147
VFDR	Q2P17V0082:OPEN:CLOSED, CCW TO RCP COOLERS - Q2P17V0082 - CCW TO RCP COOLERS. This normally open, required close valve. The CCW system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-148
VFDR	Q2P18C0002A:OFF:ON, EMERGENCY AIR COMPRESSOR 2A - Q2P18C0002A - EMERGENCY AIR COMPRESSOR 2A. This normally off, required on compressor. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-149

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2P18C0002A:OFF:ON, EMERGENCY AIR COMPRESSOR 2A - Q2P18C0002A - EMERGENCY AIR COMPRESSOR 2A. This normally off, required on compressor. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-150
VFDR	Q2P18C0002A:OFF:ON-LOC, EMERGENCY AIR COMPRESSOR 2A - Q2P18C0002A - EMERGENCY AIR COMPRESSOR 2A. This normally off, required on compressor. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-151
VFDR	Q2P18C0002A:OFF:ON-LOC, EMERGENCY AIR COMPRESSOR 2A - Q2P18C0002A - EMERGENCY AIR COMPRESSOR 2A. This normally off, required on compressor. Instrument air is normally credited to supply the Atmospheric Reliefs. Should instrument air not be available the Emergency Air System is aligned to provide control air. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-152
Fire Safety Analysis Data I	Manager (4.1)





Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	/FDR:
VFDR	Q2R15A0007:ENERGIZED:ENERGIZED-EDG2B, 4160V SWITCHGEAR BUS 2G - Q2R15A0007 - 4160V SWITCHGEAR BUS 2G. This normally energized, required energized switchgear. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-153	
VFDR	Q2R15A0007:ENERGIZED:ENERGIZED-EDG2B, 4160V SWITCHGEAR BUS 2G - Q2R15A0007 - 4160V SWITCHGEAR BUS 2G. This normally energized required energized switchgear. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room an no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-154	
VFDR	Q2R15A0505:ENERGIZED:ENERGIZED, 4160V SWITCHGEAR BUS 2K - Q2R15A0505 - 4160V SWITCHGEAR BUS 2K. This normally energized, required energized switchgear. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	d.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-155	
VFDR	Q2R15A0505:ENERGIZED:ENERGIZED, 4160V SWITCHGEAR BUS 2K - Q2R15A0505 - 4160V SWITCHGEAR BUS 2K. This normally energized, required energized switchgear. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	d
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

(

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-040-PCS-156
VFDR	Q2R15A0506:ENERGIZED:ENERGIZED, 4160V SWITCHGEAR BUS 2L - Q2R15A0506 - 4160V SWITCHGEAR BUS 2L. This normally energized, required energized switchgear. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-157
VFDR	Q2R15A0506:ENERGIZED:ENERGIZED, 4160V SWITCHGEAR BUS 2L - Q2R15A0506 - 4160V SWITCHGEAR BUS 2L. This normally energized, required energized switchgear. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-158
VFDR	Q2R16B0005:ENERGIZED:ENERGIZED, 600V LOAD CENTER 2C - Q2R16B0005 - 600V LOAD CENTER 2C. This normally energized, required energized load center. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-159
VFDR	Q2R16B0005:ENERGIZED:ENERGIZED, 600V LOAD CENTER 2C - Q2R16B0005 - 600V LOAD CENTER 2C. This normally energized, required energized load center. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.



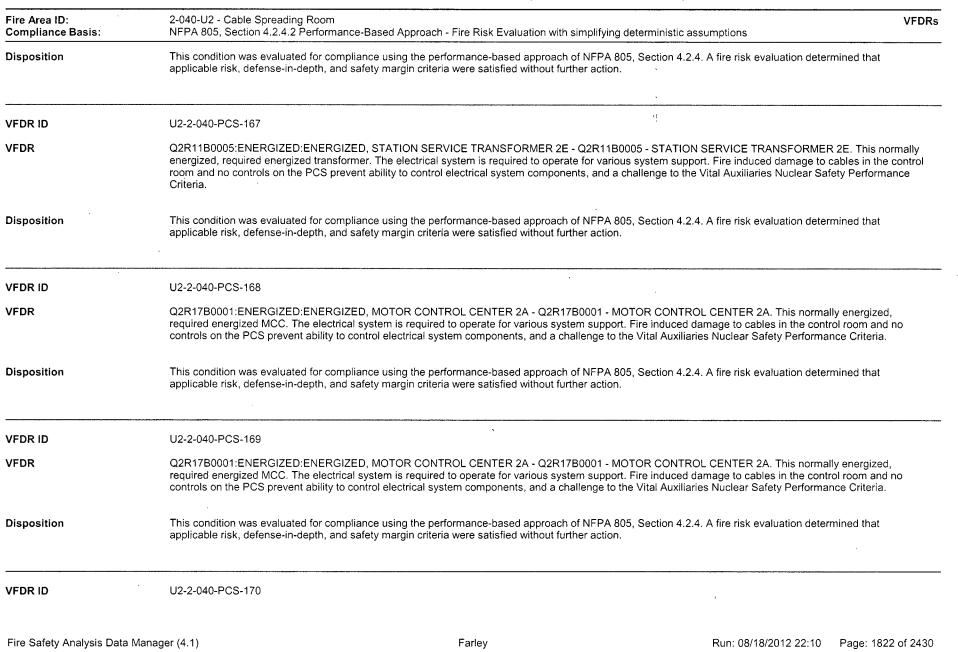
.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determ applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	ined that
VFDR ID	U2-2-040-PCS-160	
VFDR	Q2R16B0006:ENERGIZED:ENERGIZED, 600V LOAD CENTER 2D - Q2R16B0006 - 600V LOAD CENTER 2D. This normally energized, requ load center. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	uired energized controls on the
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determi applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	ined that
VFDR ID	U2-2-040-PCS-161	
VFDR	Q2R16B0006:ENERGIZED:ENERGIZED, 600V LOAD CENTER 2D - Q2R16B0006 - 600V LOAD CENTER 2D. This normally energized, required energized load center. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determination applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	ined that
		<u>!</u>
VFDR ID	U2-2-040-PCS-162	
VFDR	Q2R11B0004:ENERGIZED:ENERGIZED, STATION SERVICE TRANSFORMER 2D - Q2R11B0004 - STATION SERVICE TRANSFORMER 2D. This normally energized, required energized transformer. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-163	
Fire Safety Analysis Data M	Manager (4.1) Farley Run: 08/18/2012 22:10	Page: 1820 of 2430

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR Disposition	Q2R11B0004:ENERGIZED:ENERGIZED, STATION SERVICE TRANSFORMER 2D - Q2R11B0004 - STATION SERVICE TRANSFORMER 2D. This normal energized, required energized transformer. The electrical system is required to operate for various system support. Fire induced damage to cables in the con room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR	Q2R16B0007:ENERGIZED:ENERGIZED, 600V LOAD CENTER 2E - Q2R16B0007 - 600V LOAD CENTER 2E. This normally energized, required energized load center. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-165	
VFDR	Q2R16B0007:ENERGIZED:ENERGIZED, 600V LOAD CENTER 2E - Q2R16B0007 - 600V LOAD CENTER 2E. This normally energized, required energized load center. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-166	
VFDR	Q2R11B0005:ENERGIZED:ENERGIZED, STATION SERVICE TRANSFORMER 2E - Q2R11B0005 - STATION SERVICE TRANSFORMER 2E. This normally energized, required energized transformer. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	

Fire Safety Analysis Data Manager (4.1)





Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
VFDR	Q2R17B0002:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2B - Q2R17B0002 - MOTOR CONTROL CENTER 2B. This normally energized, required energized MCC. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	0
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-171	
VFDR	Q2R17B0002:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2B - Q2R17B0002 - MOTOR CONTROL CENTER 2B. This normally energized, required energized MCC. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	0
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-172	
VFDR	Q2R17B0008:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2U - Q2R17B0008 - MOTOR CONTROL CENTER 2U. This normally energized, required energized MCC. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	0
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-173	
VFDR	Q2R17B0008:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2U - Q2R17B0008 - MOTOR CONTROL CENTER 2U. This normally energized, required energized MCC. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	0
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	





Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
VFDR ID	U2-2-040-PCS-174	
VFDR	Q2R17B0009:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2V - Q2R17B0009 - MOTOR CONTROL CENTER 2V. This normally energized, required energized MCC. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	C
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-175	
VFDR	Q2R17B0009:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2V - Q2R17B0009 - MOTOR CONTROL CENTER 2V. This normally energized, required energized MCC. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	Э
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-176	
VFDR	Q2R17B0510:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2T - Q2R17B0510 - MOTOR CONTROL CENTER 2T. This normally energized, required energized MCC. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	2
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-177	
VFDR	Q2R17B0510:ENERGIZED:ENERGIZED, MOTOR CONTROL CENTER 2T - Q2R17B0510 - MOTOR CONTROL CENTER 2T. This normally energized, required energized MCC. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.	5

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-178
VFDR	Q2R43A0505:STANDBY:ENERGIZED, 2B DIESEL GENERATOR - Q2R43A0505 - 2B DIESEL GENERATOR. This normally standby, required on diesel generator. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition .	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-179
VFDR	Q2R43A0505:STANDBY:ENERGIZED, 2B DIESEL GENERATOR - Q2R43A0505 - 2B DIESEL GENERATOR. This normally standby, required on diesel generator. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-180
VFDR	Q2R43E0001A:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2F - Q2R43E0001A - SEQUENCER BUS 2F. This normally available, required available sequencer. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-181
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1825 of 2430

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2R43E0001A:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2F - Q2R43E0001A - SEQUENCER BUS 2F. This normally available, required available sequencer. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-182
VFDR	Q2R43E0001A:AVAILABLE:AVAILABLE-SHED, SEQUENCER BUS 2F - Q2R43E0001A - SEQUENCER BUS 2F. This normally available, required available sequencer. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-183
VFDR	Q2R43E0001A:AVAILABLE:AVAILABLE-SHED, SEQUENCER BUS 2F - Q2R43E0001A - SEQUENCER BUS 2F. This normally available, required available sequencer. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-184
VFDR	Q2R43E0001B:AVAILABLE:AVAILABLE-SHED, SEQUENCER BUS 2G - Q2R43E0001B - SEQUENCER BUS 2G. This normally available, required available sequencer. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-040-PCS-185
VFDR	Q2R43E0001B:AVAILABLE:AVAILABLE-SHED, SEQUENCER BUS 2G - Q2R43E0001B - SEQUENCER BUS 2G. This normally available, required available sequencer. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-186
VFDR	QSR43A0501:STANDBY:ENERGIZING U2, 1-2A DIESEL GENERATOR - QSR43A0501 - 1-2A DIESEL GENERATOR. This normally standby, required on diesel generator. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition _	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-187
VFDR	QSR43A0501:STANDBY:ENERGIZING U2, 1-2A DIESEL GENERATOR - QSR43A0501 - 1-2A DIESEL GENERATOR. This normally standby, required on diesel generator. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-188

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - Q2B31L0001A: - PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL. This normally on/off, required off pressurizer heater. The pressurizer heater is required to be secured to prevent uncontrolled pressurizer pressure transients. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control load center, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-189
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - Q2B31L0001A: - PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL. This normally on/off, required off pressurizer heater. The pressurizer heater is required to be secured to prevent uncontrolled pressurizer pressure transients. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control load center, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-190
VFDR	N2B31L0001C:ON:OFF, PRESSURIZER HEATER GROUP 2C DISTRIBUTION PANEL - N2B31L0001C - PRESSURIZER HEATER GROUP 2C DISTRIBUTION PANEL. This normally on, required off pressurizer heater. The pressurizer heater are used to maintain the RCS pressure. Fire induced damage to cables and power supply may result in the inability to take control of pressurizer heater, and a challenge to the RCS Pressure and Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-04Q-PCS-191
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1828 of 2430

.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	N2B31L0001C:ON:OFF, PRESSURIZER HEATER GROUP 2C DISTRIBUTION PANEL - N2B31L0001C - PRESSURIZER HEATER GROUP 2C DISTRIBUTION PANEL. This normally on, required off pressurizer heater. The pressurizer heater are used to maintain the RCS pressure. Fire induced damage to cables and power supply may result in the inability to take control of pressurizer heater, and a challenge to the RCS Pressure and Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-192
VFDR	N2B31L0001D:ON:OFF, PRESSURIZER HEATER GROUP 2D DISTRIBUTION PANEL - N2B31L0001D - PRESSURIZER HEATER GROUP 2D DISTRIBUTION PANEL. This normally on, required off pressurizer heater. The pressurizer heater are used to maintain the RCS pressure. Fire induced damage to cables and power supply may result in the inability to take control of pressurizer heater, and a challenge to the RCS Pressure and Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-193
VFDR	N2B31L0001D:ON:OFF, PRESSURIZER HEATER GROUP 2D DISTRIBUTION PANEL - N2B31L0001D - PRESSURIZER HEATER GROUP 2D DISTRIBUTION PANEL. This normally on, required off pressurizer heater. The pressurizer heater are used to maintain the RCS pressure. Fire induced damage to cables and power supply may result in the inability to take control of pressurizer heater, and a challenge to the RCS Pressure and Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-040-PCS-194



:

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	N2B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL - N2B31L0001E - PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL. This normally on, required off pressurizer heater. The pressurizer heater are used to maintain the RCS pressure. Fire induced damage to cables and power supply may result in the inability to take control of pressurizer heater, and a challenge to the RCS Pressure and Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-195
VFDR	N2B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL - N2B31L0001E - PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL. This normally on, required off pressurizer heater. The pressurizer heater are used to maintain the RCS pressure. Fire induced damage to cables and power supply may result in the inability to take control of pressurizer heater, and a challenge to the RCS Pressure and Inventory Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-196
VFDR	Q2P19HV2228:CLOSED:OPEN, INSTRUMENT AIR CONTAINMENT ISOLATION BACK-UP VALVE - Q2P19HV2228 - INSTRUMENT AIR CONTAINMENT ISOLATION BACK-UP VALVE. This normally closed, required open valve. Instrument air is normally credited to supply the PORV. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-197

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2P19HV2228:CLOSED:OPEN, INSTRUMENT AIR CONTAINMENT ISOLATION BACK-UP VALVE - Q2P19HV2228 - INSTRUMENT AIR CONTAINMENT ISOLATION BACK-UP VALVE. This normally closed, required open valve. Instrument air is normally credited to supply the PORV. Fire induced damage to cables in the control room for instrument air and no controls on the PCS prevent ability to control air operated valves, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-198
VFDR	Q2E11V0025A:CLOSED:CLOSED, CONTAINMENT SUMP TO 2A RHR PUMP (INSIDE ENCAPSULATION) - Q2E11V0025A - CONTAINMENT SUMP TO 2A RHR PUMP (INSIDE ENCAPSULATION). This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-199
VFDR	Q2E11V0025A:CLOSED:CLOSED, CONTAINMENT SUMP TO 2A RHR PUMP (INSIDE ENCAPSULATION) - Q2E11V0025A - CONTAINMENT SUMP TO 2A RHR PUMP (INSIDE ENCAPSULATION). This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-200
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1831 of 2430

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2E11V0026A:CLOSED:CLOSED, CONTAINMENT SUMP TO 2A RHR PUMP - Q2E11V0026A - CONTAINMENT SUMP TO 2A RHR PUMP. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-201
VFDR	Q2E11V0026A:CLOSED:CLOSED, CONTAINMENT SUMP TO 2A RHR PUMP - Q2E11V0026A - CONTAINMENT SUMP TO 2A RHR PUMP. This normally closed, required closed valve. The valve is used to prevent drain down of the RWST to Containment Sump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-202
VFDR	Q2E13P0001A:ON:OFF, 2A CONTAINMENT SPRAY PUMP - Q2E13P0001A - 2A CONTAINMENT SPRAY PUMP. This normally off, required off pump. The containment spray pump if running can drain down the RWST to Containment. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-203
Fire Safety Analysis Data	Manager (4.1)

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2E13P0001A:ON:OFF, 2A CONTAINMENT SPRAY PUMP - Q2E13P0001A - 2A CONTAINMENT SPRAY PUMP. This normally off, required off pump. The containment spray pump if running can drain down the RWST to Containment. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-204
VFDR	Q2E13P0001B:ON:OFF, 2B CONTAINMENT SPRAY PUMP - Q2E13P0001B - 2B CONTAINMENT SPRAY PUMP. This normally off, required off pump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-205
VFDR	Q2E13P0001B:ON:OFF, 2B CONTAINMENT SPRAY PUMP - Q2E13P0001B - 2B CONTAINMENT SPRAY PUMP. This normally off, required off pump. RWST inventory is used to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Reactivity Control and Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-206
Fire Safety Analysis Data №	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1833 of 243





Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2E16H0009:STANDBY:ON, 600V LOAD CENTER 2D ROOM AIR COOLER - Q2E16H0009 - 600V LOAD CENTER 2D ROOM AIR COOLER. This normally standby, required on cooler. The cooler is required to support load center. Failure of load center can disable to ability to control various systems. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control cooler, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-207
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - Q2E21P0002A - 2A CHARGING PUMP. This normally on, required on pump. The charging pump is required for makeup to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables, CCW and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-040-PCS-208
VFDR	Q2E21P0002B:ON:ON/OFF-HSP, 2B CHARGING PUMP - Q2E21P0002B - 2B CHARGING PUMP. This normally standby, required on pump. The charging pump is required for makeup to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables, CCW and loss of dc control power in the control room prevent ability to control pump, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-209

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - Q2E21P0002B - 2B CHARGING PUMP. This normally on, required on pump. The charging pump is required for makeup to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables, CCW and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-210
VFDR	Q2E21P0002C:ON:ON/OFF-HSP, 2C CHARGING PUMP - Q2E21P0002C - 2C CHARGING PUMP. This normally standby, required on pump. The charging pump is required for makeup to maintain K effective less than 0.99 and maintain RCS level. Fire induced damage to cables, CCW and loss of dc control power in the control room prevent ability to control pump, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-211
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - Q2E21P0002A - 2A CHARGING PUMP. This normally on, required off pump. The charging pump is required off control RCS makeup capability. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
annan fa shinne e sa sen en en esta esta esta esta esta esta esta esta	U2-2-040-PCS-212

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2E21P0002A:ON:ON/OFF, 2A CHARGING PUMP - Q2E21P0002A - 2A CHARGING PUMP. This normally on, required off pump. The charging pump is required off to control RCS makeup capability. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-213
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - Q2E21P0002B - 2B CHARGING PUMP. This normally on, required off pump. The charging pump is required off to control RCS makeup capability. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-214
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - Q2E21P0002B - 2B CHARGING PUMP. This normally on, required off pump. The charging pump is required off to control RCS makeup capability. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-215
	·

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:10 Page: 1836 of 2430

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - Q2E21P0002B - 2B CHARGING PUMP. This normally on, required off pump. The charging pump is required off to control RCS makeup capability. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-216		
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - Q2E21P0002B - 2B CHARGING PUMP. This normally on, required off pump. The charging pump is required off to control RCS makeup capability. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-217		
VFDR	Q2E21P0002C:ON:ON/OFF, 2C CHARGING PUMP - Q2E21P0002C - 2C CHARGING PUMP. This normally on, required off pump. The charging pump is required off to control RCS makeup capability. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-218		

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2E21P0002C:ON:ON/OFF, 2C CHARGING PUMP - Q2E21P0002C - 2C CHARGING PUMP. This normally on, required off pump. The charging pump is required off to control RCS makeup capability. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-219	
VFDR	Q2E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - Q2E21V0016A - HHSI TO RCS COLD LEG ISOLATION. This normally closed, required closed valve. The cold leg safety injection path is not credited for RCS makeup. Valve is required close to prevent pump run out and uncontrolled RCS makeup. Fire induced damage to cables, spurious ESFAS and loss of control power in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-220	
VFDR	Q2E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - Q2E21V0016A - HHSI TO RCS COLD LEG ISOLATION. This normally closed, required closed valve. The cold leg safety injection path is not credited for RCS makeup. Valve is required close to prevent pump run out and uncontrolled RCS makeup. Fire induced damage to cables, spurious ESFAS and loss of control power in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-221	
VFDR ID Fire Safety Analysis Data M		

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Ba	sed Approach - Fire Risk Evaluation with simplifying	g deterministic assumptions	VFDR
VFDR	closed, required closed valve. The cold leg uncontrolled RCS makeup. Fire induced da ability to control valve, and a challenge to th	B, HHSI TO RCS COLD LEG ISOLATION - Q2E21 safety injection path is not credited for RCS makeup mage to cables, spurious ESFAS and loss of contro e Inventory and Pressure Control Nuclear Safety P 2.3 of NFPA 805. This is a Separation Issue. Evalua	b. Valve is required close to prevent pump run pl power in the control room and no controls o erformance Criteria. This condition represent	n out and n the PCS prevent s a variance from
Disposition		e using the performance-based approach of NFPA & / margin criteria were satisfied without further action		mined that
VFDR ID	U2-2-040-PCS-222	· · ·		
VFDR	closed, required closed valve. The cold leg uncontrolled RCS makeup. Fire induced da ability to control valve, and a challenge to th	CLOSED-TRAIN B, HHSI TO RCS COLD LEG ISOLATION - Q2E21V0016B - HHSI TO RCS COLD LEG ISOLATION. This normally alve. The cold leg safety injection path is not credited for RCS makeup. Valve is required close to prevent pump run out and b. Fire induced damage to cables, spurious ESFAS and loss of control power in the control room and no controls on the PCS prevent d a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from nents of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of		n out and , n the PCS prevent s a variance from
Disposition		e using the performance-based approach of NFPA & / margin criteria were satisfied without further action		mined that
VFDR ID	U2-2-040-PCS-223			
VFDR	Q2É21V0016B:OPEN:CLOSED-TRAIN A, HHSI TO RCS COLD LEG ISOLATION - Q2E21V0016B - HHSI TO RCS COLD LEG ISOLATION. This normally open, required closed valve. The cold leg safety injection path is not credited for RCS makeup. Valve is required close to prevent pump run out and uncontrolle RCS makeup. Fire induced damage to cables, spurious ESFAS and loss of control power in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		out and uncontrolled event ability to nce from the	
Disposition		e using the performance-based approach of NFPA & margin criteria were satisfied without further action		mined that
VFDR ID	U2-2-040-PCS-224			
Fire Safety Analysis Data I	Manager (4.1)	Farley	Run: 08/18/2012 22:10	Page: 1839 of 2430



Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2E21V0016B:OPEN:CLOSED-TRAIN A, HHSI TO RCS COLD LEG ISOLATION - Q2E21V0016B - HHSI TO RCS COLD LEG ISOLATION. This normally open, required closed valve. The cold leg safety injection path is not credited for RCS makeup. Valve is required close to prevent pump run out and uncontrolled RCS makeup. Fire induced damage to cables, spurious ESFAS and loss of control power in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-225	
VFDR	Q2E21V0258:CLOSED:OPEN, CHARGING PUMPS TO REGEN HX - Q2E21V0258 - CHARGING PUMPS TO REGEN HX. This normally closed, required open valve. The charging line is required to be available to provide RCS makeup. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-226	
VFDR	Q2E21V0258:CLOSED:OPEN, CHARGING PUMPS TO REGEN HX - Q2E21V0258 - CHARGING PUMPS TO REGEN HX. This normally closed, required open valve. The charging line is required to be available to provide RCS makeup. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-227	
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1840 of 2430	

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR Q2E21V0257:CLOSED:OPEN, CHARGING PUMPS TO REGEN HX - Q2E21V0257 - CHARGING PUMPS TO REGEN HX. This no open valve. The charging line is required to be available to provide RCS makeup. Fire induced damage to cables in the control roon PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Perfor condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evalu performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-228		
VFDR	Q2E21V0257:CLOSED:OPEN, CHARGING PUMPS TO REGEN HX - Q2E21V0257 - CHARGING PUMPS TO REGEN HX. This normally closed, required open valve. The charging line is required to be available to provide RCS makeup. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-229		
VFDR	Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT OUTLET ISOLATION. This normally open, required open valve. The VCT outlet valve is required to be open prior to opening of the RWST suction valves to prevent pump damage. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
	U2-2-040-PCS-230		







Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
FDR Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT OUTLET ISOLATION. This normally open, required open outlet valve is required to be open prior to opening of the RWST suction valves to prevent pump damage. Fire induced damage to cables in and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nucle Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Sep Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
/FDR ID	U2-2-040-PCS-231		
/FDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376B - VCT OUTLET ISOLATION. This normally open, required open valve. The VCT outlet valve is required to be open prior to opening of the RWST suction valves to prevent pump damage. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
/FDR ID	U2-2-040-PCS-232		
/FDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376B - VCT OUTLET ISOLATION. This normally open, required open valve. The VCT outlet valve is required to be open prior to opening of the RWST suction valves to prevent pump damage. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Reactivity Control, Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-233		

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2E21V0183:CLOSED:CLOSED, EXCESS LETDOWN HX DISCHARGE - Q2E21V0183 - EXCESS LETDOWN HX DISCHARGE. This normally closed, required closed valve. The letdown line is required to be isolated to conserve RCS inventory. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-234		
VFDR	Q2E21V0183:CLOSED:CLOSED, EXCESS LETDOWN HX DISCHARGE - Q2E21V0183 - EXCESS LETDOWN HX DISCHARGE. This normally closed, required closed valve. The letdown line is required to be isolated to conserve RCS inventory. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-235		
VFDR	Q2E21V0246:OPEN:CLOSED, EXCESS LETDOWN ISOLATION (UNDER REFUELING CANAL) - Q2E21V0246 - EXCESS LETDOWN ISOLATION (UNDER REFUELING CANAL). This normally open, required closed valve. The letdown line is required to be isolated to conserve RCS inventory. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-236		

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR Q2E21V0246:OPEN:CLOSED, EXCESS LETDOWN ISOLATION (UNDER REFUELING CANAL) - Q2E21V0246 - EXCESS LETDOW REFUELING CANAL). This normally open, required closed valve. The letdown line is required to be isolated to conserve RCS invento to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressur Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-237	
VFDR	Q2E21V0247:OPEN:CLOSED, EXCESS LETDOWN ISOLATION (UNDER REFUELING CANAL) - Q2E21V0247 - EXCESS LETDOWN ISOLATION (UNDER REFUELING CANAL). This normally open, required closed valve. The letdown line is required to be isolated to conserve RCS inventory. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-238	
VFDR	Q2E21V0247:OPEN:CLOSED, EXCESS LETDOWN ISOLATION (UNDER REFUELING CANAL) - Q2E21V0247 - EXCESS LETDOWN ISOLATION (UNDER REFUELING CANAL). This normally open, required closed valve. The letdown line is required to be isolated to conserve RCS inventory. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-040-PCS-239	

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR Q2E21V0249A:OPEN:CLOSED, RCP SEAL WATER RETURN ISOLATION - Q2E21V0249A -			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-240		
VFDR	Q2E21V0249A:OPEN:CLOSED, RCP SEAL WATER RETURN ISOLATION - Q2E21V0249A - RCP SEAL WATER RETURN ISOLATION. This normally open, required closed valve. The letdown line is required to be isolated to conserve RCS inventory. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-241		
VFDR	Q2E21V0249B:OPEN:CLOSED, RCP SEAL WATER RETURN ISOLATION - Q2E21V0249B - RCP SEAL WATER RETURN ISOLATION. This normally open, required closed valve. The letdown line is required to be isolated to conserve RCS inventory. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-242		







!

Attachment C Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

`

Fire Area ID: Compliance Basis: 2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions VFDR Q2E21V0249B:OPEN:CLOSED, RCP SEAL WATER RETURN ISOLATION - Q2E21V0249B - RCP SEAL WATER RETURN ISOLAT required closed valve. The letdown line is required to be isolated to conserve RCS inventory. Fire induced damage to cables in the co on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteri represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for com performance-based approach of NFPA 805, Section 4.2.4.			
			Disposition
VFDR ID	U2-2-040-PCS-243		
VFDR	Q2E21V0250:TO VCT:TO VCT, EXCESS LETDOWN DIVERT VALVE - Q2E21V0250 - EXCESS LETDOWN DIVERT VALVE. This normally to VCT, required to VCT valve. The letdown line is required to be isolated to conserve RCS inventory. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-244		
VFDR	Q2E21V0250:TO VCT:TO VCT, EXCESS LETDOWN DIVERT VALVE - Q2E21V0250 - EXCESS LETDOWN DIVERT VALVE. This normally to VCT, required to VCT valve. The letdown line is required to be isolated to conserve RCS inventory. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
	U2-2-040-PCS-245		

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance	Based Approach - Fire Risk Evaluation with simplif	ying deterministic assumptions	VFDRs
VFDR	condensate pumps can injection fluid into SG level and may result in overcooling a PCS prevent ability to control pump, and	NDENSATE PUMP 2A - N2N21P0001A - CONDEN o the steam generator if and when the steam gener nd loss of TDAFW. Fire induced damage to cables a challenge to the Decay Heat Removal Nuclear S ection 4.2.3 of NFPA 805. This is a Separation Issu	ator pressure has sufficiently decreased. This re and loss of control power in the control room an afety Performance Criteria. This condition repres	sults in uncontrolled d no controls on the sents a variance
Disposition		nce using the performance-based approach of NFF fety margin criteria were satisfied without further ac		rmined that
VFDR ID	U2-2-040-PCS-246			
VFDR	condensate pumps can injection fluid into SG level and may result in overcooling a PCS prevent ability to control pump, and	N/STANDBY:OFF, CONDENSATE PUMP 2A - N2N21P0001A - CONDENSATE PUMP 2A. This normally on/standby, required off pump. The os can injection fluid into the steam generator if and when the steam generator pressure has sufficiently decreased. This results in uncontrolled or result in overcooling and loss of TDAFW. Fire induced damage to cables and loss of control power in the control room and no controls on the ty to control pump, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance istic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach ction 4.2.4.		
Disposition		nce using the performance-based approach of NFF fety margin criteria were satisfied without further ac		mined that
VFDR ID	U2-2-040-PCS-247			
VFDR	N2N21P0001B:ON/STANDBY:OFF, CONDENSATE PUMP 2B - N2N21P0001B - CONDENSATE PUMP 2B. This normally on/standby, required off pump. The condensate pumps can injection fluid into the steam generator if and when the steam generator pressure has sufficiently decreased. This results in uncontrolled SG level and may result in overcooling and loss of TDAFW. Fire induced damage to cables and loss of control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		sults in uncontrolled d no controls on the sents a variance	
Disposition		nce using the performance-based approach of NFF fety margin criteria were satisfied without further ac		rmined that
VFDR ID	U2-2-040-PCS-248			
Fire Safety Analysis Data I	Manager (4.1)	Farley	Run: 08/18/2012 22:10	Page: 1847 of 2430

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	N2N21P0001B:ON/STANDBY:OFF, CONDENSATE PUMP 2B - N2N21P0001B - CONDENSATE PUMP 2B. This normally on/standby, required off pun condensate pumps can injection fluid into the steam generator if and when the steam generator pressure has sufficiently decreased. This results in unco SG level and may result in overcooling and loss of TDAFW. Fire induced damage to cables and loss of control power in the control room and no controls PCS prevent ability to control pump, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a varia from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based app of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-249		
VFDR	N2N21P0001C:ON/STANDBY:OFF, CONDENSATE PUMP 2C - N2N21P0001C - CONDENSATE PUMP 2C. This normally on/standby, required off pump. The condensate pumps can injection fluid into the steam generator if and when the steam generator pressure has sufficiently decreased. This results in uncontrolled SG level and may result in overcooling and loss of TDAFW. Fire induced damage to cables and loss of control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-250		
VFDR	N2N21P0001C:ON/STANDBY:OFF, CONDENSATE PUMP 2C - N2N21P0001C - CONDENSATE PUMP 2C. This normally on/standby, required off pump. The condensate pumps can injection fluid into the steam generator if and when the steam generator pressure has sufficiently decreased. This results in uncontrolled SG level and may result in overcooling and loss of TDAFW. Fire induced damage to cables and loss of control power in the control room and no controls on the PCS prevent ability to control pump, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-251		
Fire Safety Analysis Data M	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1848 of 2430		

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2B31V0061:OPEN:OPEN/CLOSED-HSPB, PRESSURIZER POWER OPERATED RELIEF VALVE - Q2B31V0061 - PRESSURIZER POWER OPERATED RELIEF VALVE. This normally closed, required closed valve. The PORV line is required to be isolated to prevent uncontrolled RCS inventory losses and pressure transients. Fire induced damage to cables are not isolated from the control room for operation at the PCS, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 80 This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-252
VFDR	Q2B31V0061:OPEN:OPEN/CLOSED-HSPB, PRESSURIZER POWER OPERATED RELIEF VALVE - Q2B31V0061 - PRESSURIZER POWER OPERATED RELIEF VALVE. This normally closed, required closed valve. The PORV line is required to be isolated to prevent uncontrolled RCS inventory losses and pressure transients. Fire induced damage to cables are not isolated from the control room for operation at the PCS, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 80: This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-253
VFDR	Q2P15SV3103:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID SAMPLE ISOLATION - Q2P15SV3103 - PRESSURIZER LIQUID SAMPLE ISOLATION. This normally close, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-254
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:10 Page: 1849 of





Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2P15SV3103:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID SAMPLE ISOLATION - Q2P15SV3103 - PRESSURIZER LIQUID SAMPLE ISOLATION. This normally close, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	* This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-255	
VFDR	Q2P15SV3104:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM SAMPLE ISOLATION - Q2P15SV3104 - PRESSURIZER STEAM SAMPLE ISOLATION. This normally closed, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-256	
VFDR	Q2P15SV3104:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM SAMPLE ISOLATION - Q2P15SV3104 - PRESSURIZER STEAM SAMPLE ISOLATION. This normally closed, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
	U2-2-040-PCS-257	

,

Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2P15SV3331:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM TO GFFD ISOLATION - Q2P15SV3331 - PRESSURIZER STEAM TO GFFD ISOLATION. This normally closed, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-258
VFDR	Q2P15SV3331:CLOSED:OPEN/CLOSED, PRESSURIZER STEAM TO GFFD ISOLATION - Q2P15SV3331 - PRESSURIZER STEAM TO GFFD ISOLATION. This normally closed, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-259
VFDR	Q2P15SV3332:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID ISOLATION - Q2P15SV3332 - PRESSURIZER LIQUID ISOLATION. This normally closed, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
	U2-2-040-PCS-260

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2P15SV3332:CLOSED:OPEN/CLOSED, PRESSURIZER LIQUID ISOLATION - Q2P15SV3332 - PRESSURIZER LIQUID ISOLATION. This normally closed, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-261
VFDR	Q2P15SV3333:CLOSED:OPEN/CLOSED, RX LOOPS 2 AND 3 SAMPLE ISOLATION SOLENOID - Q2P15SV3333 - RX LOOPS 2 AND 3 SAMPLE ISOLATION SOLENOID. This normally closed, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-262
VFDR	Q2P15SV3333:CLOSED:OPEN/CLOSED, RX LOOPS 2 AND 3 SAMPLE ISOLATION SOLENOID - Q2P15SV3333 - RX LOOPS 2 AND 3 SAMPLE ISOLATION SOLENOID. This normally closed, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-040-PCS-263

З

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2P15SV3765:CLOSED:OPEN/CLOSED, RCS HOT LEG SAMPLE ISOLATION SOLENOID - Q2P15SV3765 - RCS HOT LEG SAMPLE ISOLATION SOLENOID. This normally closed, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-264	
VFDR	Q2P15SV3765:CLOSED:OPEN/CLOSED, RCS HOT LEG SAMPLE ISOLATION SOLENOID - Q2P15SV3765 - RCS HOT LEG SAMPLE ISOLATION SOLENOID. This normally closed, required closed valve. The sample lines are required to be isolated to minimize RCS inventory losses. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-040-PCS-265	
VFDR	Q2E11P0001A:OFF:ON/OFF, 2A RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LHSI PUMP. This normally off, required off pump. The LHSI pump are required off to prevent damage of pump for NPO mode. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pumps, and a challenge to the NPO Decay Hear Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	U2-2-040-PCS-266	



Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
VFDR	Q2E11P0001A:OFF:ON/OFF, 2A RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LHSI PUMP. This normally off, required off pump off to prevent damage of pump for NPO mode. Fire induced damage to cables and loss of dc control power in the control room ar prevent ability to control pumps, and a challenge to the NPO Decay Hear Removal Nuclear Safety Performance Criteria. This cor from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the of NFPA 805, Section 4.2.4.	nd no controls on the PCS indition represents a variance
Disposition	: This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evalu applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	uation determined that
VFDR ID	U2-2-040-PCS-267	
VFDR	Q2E11P0001B:OFF:ON/OFF, 2B RHR/LHSI PUMP - Q2E11P0001B - 2B RHR/LHSI PUMP. This normally off, required off pump off to prevent damage of pump for NPO mode. Fire induced damage to cables and loss of dc control power in the control room ar prevent ability to control pumps, and a challenge to the NPO Decay Heat Removal Nuclear Safety Performance Criteria. This cor from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the of NFPA 805, Section 4.2.4.	nd no controls on the PCS ndition represents a variance
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluapplicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	uation determined that
VFDR ID	U2-2-040-PCS-268	
VFDR	Q2E11P0001B:OFF:ON/OFF, 2B RHR/LHSI PUMP - Q2E11P0001B - 2B RHR/LHSI PUMP. This normally off, required off pump off to prevent damage of pump for NPO mode. Fire induced damage to cables and loss of dc control power in the control room ar prevent ability to control pumps, and a challenge to the NPO Decay Heat Removal Nuclear Safety Performance Criteria. This cor from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the of NFPA 805, Section 4.2.4.	nd no controls on the PCS ndition represents a variance
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluapplicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	uation determined that
VFDR ID	U2-2-040-PCS-269	
Fire Safety Analysis Data	ata Manager (4.1) Farley Run: 08/18/20	012 22:10 Page: 1854 of 2430

4

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2N11PV3371A:OPEN:MODULATE-HSP, MAIN STEAM ATMOS RELIEF - Q2N11PV3371A - MAIN STEAM ATMOS RELIEF. This normally open, required closed valve. ARV operation at HSP is disabled due to loss of DC power. Fire induced damage to power supply disables operation at HSP, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-270
VFDR	Q2N11PV3371A:OPEN:MODULATE-HSP, MAIN STEAM ATMOS RELIEF - Q2N11PV3371A - MAIN STEAM ATMOS RELIEF. This normally open, required closed valve. ARV operation at HSP is disabled due to loss of DC power. Fire induced damage to power supply disables operation at HSP, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-271
VFDR	Q2N11PV3371A:OPEN:MODULATE-HSP, MAIN STEAM ATMOS RELIEF - Q2N11PV3371A - MAIN STEAM ATMOS RELIEF. This normally open, required modulated valve. ARV operation at HSP is disabled due to loss of DC power. Fire induced damage to power supply disables operation at HSP, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-272
VFDR	Q2N11PV3371A:OPEN:MODULATE-HSP, MAIN STEAM ATMOS RELIEF - Q2N11PV3371A - MAIN STEAM ATMOS RELIEF. This normally open, required modulated valve. ARV operation at HSP is disabled due to loss of DC power. Fire induced damage to power supply disables operation at HSP, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.	
VFDR ID	U2-2-040-PCS-273	
VFDR	Q2N11PV3371B:OPEN:MODULATE-HSP, MAIN STEAM ATMOS RELIEF - Q2N11PV3371B - MAIN STEAM ATMOS RELIEF. This normally open, required closed valve. ARV operation at HSP is disabled due to loss of DC power. Fire induced damage to power supply disables operation at HSP, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.	
VFDR ID	U2-2-040-PCS-274	
VFDR	Q2N11PV3371B:OPEN:MODULATE-HSP, MAIN STEAM ATMOS RELIEF - Q2N11PV3371B - MAIN STEAM ATMOS RELIEF. This normally open, required closed valve. ARV operation at HSP is disabled due to loss of DC power. Fire induced damage to power supply disables operation at HSP, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.	
VFDR ID	U2-2-040-PCS-275	
VFDR	Q2N11PV3371C:OPEN:MODULATE-HSP, MAIN STEAM ATMOS RELIEF - Q2N11PV3371C - MAIN STEAM ATMOS RELIEF. This normally open, required closed valve. ARV operation at HSP is disabled due to loss of DC power. Fire induced damage to power supply disables operation at HSP, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.	

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room VFDF NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-040-PCS-276
VFDR	Q2N11PV3371C:OPEN:MODULATE-HSP, MAIN STEAM ATMOS RELIEF - Q2N11PV3371C - MAIN STEAM ATMOS RELIEF. This normally open, required closed valve. ARV operation at HSP is disabled due to loss of DC power. Fire induced damage to power supply disables operation at HSP, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-277
VFDR	Q2N11V0001A:OPEN:CLOSED-HSPG, 2A SG MSIV - Q2N11V0001A - 2A SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-278
VFDR	Q2N11V0001A:OPEN:CLOSED-HSPG, 2A SG MSIV - Q2N11V0001A - 2A SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-279

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2N11V0001B:OPEN:CLOSED-HSPG, 2B SG MSIV - Q2N11V0001B - 2B SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-280
VFDR	Q2N11V0001B:OPEN:CLOSED-HSPG, 2B SG MSIV - Q2N11V0001B - 2B SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-281
VFDR	Q2N11V0001C:OPEN:CLOSED-HSPG, 2C SG MSIV - Q2N11V0001C - 2C SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-282
VFDR	Q2N11V0001C:OPEN:CLOSED-HSPG, 2C SG MSIV - Q2N11V0001C - 2C SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-283
VFDR	Q2N11V0002A:OPEN:CLOSED, 2A SG MSIV - Q2N11V0002A - 2A SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-284
VFDR	Q2N11V0002A:OPEN:CLOSED, 2A SG MSIV - Q2N11V0002A - 2A SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-285
VFDR	Q2N11V0002B:OPEN:CLOSED, 2B SG MSIV - Q2N11V0002B - 2B SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.

:1

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-040-PCS-286
VFDR	Q2N11V0002B:OPEN:CLOSED, 2B SG MSIV - Q2N11V0002B - 2B SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-287
VFDR	Q2N11V0002C:OPEN:CLOSED, 2C SG MSIV - Q2N11V0002C - 2C SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040.PCS-288
VFDR	Q2N11V0002C:OPEN:CLOSED, 2C SG MSIV - Q2N11V0002C - 2C SG MSIV. This normally open, required closed valve. The MSIVs are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.
VFDR ID	U2-2-040-PCS-289

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2N12HV3226:CLOSED:CLOSED, TDAFWP TURBINE STEAM SUPPLY ISOLATION - Q2N12HV3226 - TDAFWP TURBINE STEAM SUPPLY ISOLATION. This normally closed, required closed valve. The TDAFW steam lines are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-290
VFDR	Q2N12HV3226:CLOSED:CLOSED, TDAFWP TURBINE STEAM SUPPLY ISOLATION - Q2N12HV3226 - TDAFWP TURBINE STEAM SUPPLY ISOLATION. This normally closed, required closed valve. The TDAFW steam lines are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-291
VFDR	Q2N12LV3608:CLOSED:MODULATE, TDAFW PUMP STEAM SUPPLY LINE AUTOMATIC DRAIN - Q2N12LV3608 - TDAFW PUMP STEAM SUPPLY LINE AUTOMATIC DRAIN. This normally closed, required closed valve. The TDAFW steam lines are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-292

1

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2N12LV3608:CLOSED:MODULATE, TDAFW PUMP STEAM SUPPLY LINE AUTOMATIC DRAIN - Q2N12LV3608 - TDAFW PUMP STEAM SUPPLY LINE AUTOMATIC DRAIN. This normally closed, required closed valve. The TDAFW steam lines are required closed to control SG pressure. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-293			
VFDR	Q2N23HV3227A:OPEN:THROTTLED, AFW SUPPLY TO STEAM GENERATOR 2A - Q2N23HV3227A - AFW SUPPLY TO STEAM GENERATOR 2A. This normally open, required throttled valve. The AFW feed is required to be throttled to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID				
VFDR	Q2N23HV3227A:OPEN:THROTTLED, AFW SUPPLY TO STEAM GENERATOR 2A - Q2N23HV3227A - AFW SUPPLY TO STEAM GENERATOR 2A. This normally open, required throttled valve. The AFW feed is required to be throttled to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
	U2-2-040-PCS-295			

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR Q2N23HV3227B:OPEN:THROTTLED, AFW SUPPLY TO STEAM GENERATOR 2B - Q2N23HV3227B - AFW SUPPLY TO STEAM GEN normally open, required closed valve. The AFW feed is required to be throttled or closed to control SG feed. Fire induced damage to ca and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance C represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compl performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-296		
VFDR	Q2N23HV3227B:OPEN:THROTTLED, AFW SUPPLY TO STEAM GENERATOR 2B - Q2N23HV3227B - AFW SUPPLY TO STEAM GENERATOR 2B. This normally open, required closed valve. The AFW feed is required to be throttled or closed to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-297		
VFDR	Q2N23HV3227C:OPEN:THROTTLED, MDAFW SUPPLY TO STEAM GENERATOR 2C - Q2N23HV3227C - MDAFW SUPPLY TO STEAM GENERATOR 2C. This normally open, required closed valve. The AFW feed is required to be throttled or closed to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-298		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:10 Page: 1863 of 2430





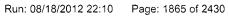


Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2N23HV3227C:OPEN:THROTTLED, MDAFW SUPPLY TO STEAM GENERATOR 2C - Q2N23HV3227C - MDAFW SUPPLY TO STEAM GENERATOR 2C. This normally open, required closed valve. The AFW feed is required to be throttled or closed to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-299
VFDR	Q2N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2B - Q2N23HV3228B - TDAFW SUPPLY TO STEAM GENERATOR 2B. This normally open, required closed valve. The AFW feed is required to be throttled or closed to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-300
VFDR	Q2N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 2B - Q2N23HV3228B - TDAFW SUPPLY TO STEAM GENERATOR 2B. This normally open, required closed valve. The AFW feed is required to be throttled or closed to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-040-PCS-301

٠

.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions				
VFDR	GENERATOR 2C. This normally open, cables in the control room and no control Criteria. This condition represents a va	N:THROTTLED-HSPF, TDAFW SUPPLY TO STEAM GENERATOR 2C - Q2N23HV3228C - TDAFW SUPPLY TO STEAM s normally open, required closed valve. The AFW feed is required to be throttled or closed to control SG feed. Fire induced damage to som and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for comp applicable risk, defense-in-depth, and s	valuated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that ise-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			
VFDR ID	U2-2-040-PCS-302	······································			
VFDR	GENERATOR 2C. This normally open, cables in the control room and no contu Criteria. This condition represents a va	N:THROTTLED-HSPF, TDAFW SUPPLY TO STEAM GENERATOR 2C - Q2N23HV3228C - TDAFW SUPPLY TO STEAM s normally open, required closed valve. The AFW feed is required to be throttled or closed to control SG feed. Fire induced damage to om and no controls on the PCS prevent ability to control valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for erformance-based approach of NFPA 805, Section 4.2.4.			
Disposition		luated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that e-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).			
VFDR ID	U2-2-040-PCS-303				
VFDR	operated to control SG feed. Fire induc the Decay Heat Removal Nuclear Safe	DN/OFF, 2A MDAFW PUMP - Q2N23P0001A - 2A MDAFW PUMP. This normally off, required on pump. The AFW pump is required to be i feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to val Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of eparation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition		liance using the performance-based approach of NFP safety margin criteria were satisfied without further act		mined that	
VFDR ID	U2-2-040-PCS-304				
Fire Safety Analysis Data	Manager (4.1)	Farley	Run: 08/18/2012 22:10	Page: 1865 of 2430	



Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR Q2N23P0001A:OFF:ON/OFF, 2A MDAFW PUMP - Q2N23P0001A - 2A MDAFW PUMP. This normally off, required on pump. The operated to control SG feed. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirem NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-305		
VFDR	Q2P16V0539:CLOSED:OPEN, SW RECIRC TO POND TRAIN A - Q2P16V0539 - SW RECIRC TO POND TRAIN A. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.		
VFDR ID	U2-2-040-PCS-306		
VFDR	Q2P16V0539:CLOSED:OPEN, SW RECIRC TO POND TRAIN A - Q2P16V0539 - SW RECIRC TO POND TRAIN A. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.		
	U2-2-040-PCS-307		

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR Q2P16V0539:CLOSED:OPEN, SW RECIRC TO POND TRAIN A - Q2P16V0539 - SW RECIRC TO POND TRAIN A. This normally of The service water system is required to operate for various system support. Fire induced damage to cables in the control room and n prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.	
VFDR ID	U2-2-040-PCS-308	
VFDR	Q2P16V0539:CLOSED:OPEN, SW RECIRC TO POND TRAIN A - Q2P16V0539 - SW RECIRC TO POND TRAIN A. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.	
VFDR ID	U2-2-040-PCS-309	
VFDR	Q2P16V0546:OPEN:OPEN/CLOSED, TRAIN A SW DISCHARGE TO RIVER - Q2P16V0546 - TRAIN A SW DISCHARGE TO RIVER. This normally closed, required closed valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.	
VFDR ID	U2-2-040-PCS-310	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:10 Page: 1867 of 2430

Fire Area ID: Compliance Basis:		2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR		Q2P16V0546:OPEN:OPEN/CLOSED, TRAIN A SW DISCHARGE TO RIVER - Q2P16V0546 - TRAIN A SW DISCHARGE TO RIVER. This normally closed, required closed valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition		This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.			
VFDR ID	1974 Manuel Webs and a second	U2-2-040-PCS-311			
VFDR		Q2P16V0546:OPEN:OPEN/CLOSED, TRAIN A SW DISCHARGE TO RIVER - Q2P16V0546 - TRAIN A SW DISCHARGE TO RIVER. This normally closed, required closed valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition		This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.			
VFDR ID		U2-2-040-PCS-312			
VFDR		Q2P16V0546:OPEN:OPEN/CLOSED, TRAIN A SW DISCHARGE TO RIVER - Q2P16V0546 - TRAIN A SW DISCHARGE TO RIVER. This normally closed, required closed valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	·	الم This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.			
VFDR ID		U2-2-040-PCS-313			

.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2P16V0538:CLOSED:OPEN, SW RECIRC TO POND TRAIN B - Q2P16V0538 - SW RECIRC TO POND TRAIN B. This normally open, required open The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PC prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-314			
VFDR	Q2P16V0538:CLOSED:OPEN, SW RECIRC TO POND TRAIN B - Q2P16V0538 - SW RECIRC TO POND TRAIN B. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-315			
VFDR	Q2P16V0538:CLOSED:OPEN, SW RECIRC TO POND TRAIN B - Q2P16V0538 - SW RECIRC TO POND TRAIN B. This normally open, required open valve. The service water system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-316			

Fire Safety Analysis Data Manager (4.1)

;



.

.

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR Q2P16V0538:CLOSED:OPEN, SW RECIRC TO POND TRAIN B - Q2P16V0538 - SW RECIRC TO POND TRAIN B. This normally operate for various system support. Fire induced damage to cables in the control room and no operate for various system support. Fire induced damage to cables in the control room and no operate ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-base 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-317		
VFDR	Q2P17P0001B:STANDBY:ON-ALIGNED TRAIN A, 2B COMPONENT COOLING WATER PUMP - Q2P17P0001B - 2B COMPONENT COOLING WATER PUMP. This normally standby, required on pump. The CCW system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-040-PCS-318		
VFDR	Q2P17P0001B:STANDBY:ON-ALIGNED TRAIN A, 2B COMPONENT COOLING WATER PUMP - Q2P17P0001B - 2B COMPONENT COOLING WATER PUMP. This normally standby, required on pump. The CCW system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
······	U2-2-040-PCS-319		

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:11 Page: 1870 of 2430

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-E	Based Approach - Fire Risk Evaluation v	ı vith simplifying deterministic assumptions	VFDR
VFDR	Q2P17P0001C:STANDBY:ON, 2C COMPONENT COOLING WATER PUMP - Q2P17P0001C - 2C COMPONENT COOLING WATER PUMP. This normally standby, required on pump. The CCW system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for complian applicable risk, defense-in-depth, and safe		ach of NFPA 805, Section 4.2.4. A fire risk evalu I further action.	uation determined that
			· · · · · · · · · · · · · · · · · · ·	
VFDR ID	U2-2-040-PCS-320			
VFDR	standby, required on pump. The CCW sys controls on the PCS prevent ability to cont	stem is required to operate for various sy trol valve, and a challenge to the Vital A	2P17P0001C - 2C COMPONENT COOLING W. ystem support. Fire induced damage to cables i uxiliaries Nuclear Safety Performance Criteria. s a Separation Issue. Evaluate for compliance u	n the control room and no This condition represents a
Disposition	This condition was evaluated for complian applicable risk, defense-in-depth, and safe		ach of NFPA 805, Section 4.2.4. A fire risk evalu further action.	uation determined that
VFDR ID	U2-2-040-PCS-321			
VFDR	required to operate for various system sup and a challenge to the Vital Auxiliaries Nuc	oport. Fire induced damage to cables in clear Safety Performance Criteria. This	TO SEC HXS. This normally open, required ope the control room and no controls on the PCS pr condition represents a variance from the determ performance-based approach of NFPA 805, Se	revent ability to control valve, ninistic requirements of Section
Disposition			ach of NFPA 805, Section 4.2.4. A fire risk evalu further action (VFDR not modeled in Fire PRA)	
VFDR ID	U2-2-040-PCS-322			
	ţ			
	ě.			
Fire Safety Analysis Data	Manager (4.1)	Farley	Run: 08/18/20	012 22:11 Page: 1871 of 2430



Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions				
VFDR	Q2P17V0030:CLOSED:OPEN-HSP, CCW TO SEC HXS - Q2P17V0030 - CCW TO SEC HXS. This normally open, required open valve. The CCW system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control valve, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined tha applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).				
VFDR ID	U2-2-040-PCS-323				
VFDR	Q2R15A0505:ENERGIZED:ENERGIZED, 4160V SWITCHGEAR BUS 2K - Q2R15A0505 - 4160V SWITCHGEAR BUS 2K. This normally energized, required energized switchgear. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-040-PCS-324				
VFDR	Q2R15A0505:ENERGIZED:ENERGIZED, 4160V SWITCHGEAR BUS 2K - Q2R15A0505 - 4160V SWITCHGEAR BUS 2K. This normally energized, required energized switchgear. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.				
VFDR ID	U2-2-040-PCS-325				
VFDR	Q2R42E0001A:ENERGIZED:ENERGIZED, BATTERY CHARGER 2A - Q2R42E0001A - BATTERY CHARGER 2A. This normally energized, required energized battery charger. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.				

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.				
	1				
VFDR ID	U2-2-040-PCS-326				
VFDR	Q2R42E0001A:ENERGIZED:ENERGIZED, BATTERY CHARGER 2A - Q2R42E0001A - BATTERY CHARGER 2A. This normally energized, required energized battery charger. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.				
VFDR ID	U2-2-040-PCS-327				
VFDR	Q2R42E0002A:AVAILABLE:AVAILABLE, 125V BATTERY 2A - Q2R42E0002A - 125V BATTERY 2A. This normally available, required available battery. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.				
VFDR ID	U2-2-040-PCS-328				
VFDR	Q2R42E0002A:AVAILABLE:AVAILABLE, 125V BATTERY 2A - Q2R42E0002A - 125V BATTERY 2A. This normally available, required available battery. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.				
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable risk and DID criteria.				
VFDR ID	U2-2-040-PCS-329				

Fire Safety Analysis Data Manager (4.1)

Farley







Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
VFDR	Q2R43E0001B:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2G - Q2R43E0001B - SEQUENCER BUS 2G. This normally available, required available sequencer. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-330			
VFDR	Q2R43E0001B:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2G - Q2R43E0001B - SEQUENCER BUS 2G. This normally available, required available sequencer. The electrical system is required to operate for various system support. Fire induced damage to cables in the control room and no controls on the PCS prevent ability to control electrical system components, and a challenge to the Vital Auxiliaries Nuclear Safety Performance Criteria.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.			
VFDR ID	U2-2-040-PCS-331			
VFDR	Q2B41P0001A:ON:OFF, RCP 2A - Q2B41P0001A - RCP 2A. This normally on, required off pump. The RCPs are required off to remove heat generated by running pumps added to RCS and limit RCS inventory losses thru seals. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pumps, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.			
VFDR ID	U2-2-040-PCS-332			
VFDR	Q2B41P0001A:ON:OFF, RCP 2A - Q2B41P0001A - RCP 2A. This normally on, required off pump. The RCPs are required off to remove heat generated by running pumps added to RCS and limit RCS inventory losses thru seals. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pumps, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.			

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room VFDR: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-333
VFDR	Q2B41P0001B:ON:OFF, RCP 2B - Q2B41P0001B - RCP 2B. This normally on, required off pump. The RCPs are required off to remove heat generated by running pumps added to RCS and limit RCS inventory losses thru seals. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pumps, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-334
VFDR	Q2B41P0001B:ON:OFF, RCP 2B - Q2B41P0001B - RCP 2B. This normally on, required off pump. The RCPs are required off to remove heat generated by running pumps added to RCS and limit RCS inventory losses thru seals. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pumps, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-040-PCS-335
VFDR	Q2B41P0001C:ON:OFF, RCP 2C - Q2B41P0001C - RCP 2C. This normally on, required off pump. The RCPs are required off to remove heat generated by running pumps added to RCS and limit RCS inventory losses thru seals. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pumps, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

,

Fire Area ID: Compliance Basis:	2-040-U2 - Cable Spreading Room NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.		
VFDR ID	. U2-2-040-PCS-336		
VFDR	Q2B41P0001C:ON:OFF, RCP 2C - Q2B41P0001C - RCP 2C. This normally on, required off pump. The RCPs are required off to remove heat generated by running pumps added to RCS and limit RCS inventory losses thru seals. Fire induced damage to cables and loss of dc control power in the control room and no controls on the PCS prevent ability to control pumps, and a challenge to the Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable DID criteria.		
VFDR ID	U2-2-040-PCS-337		
VFDR	QSP16V0508:OPEN:OPEN, SW TO POND EAST HEADER ISOLATION - This valve or the wet pit discharge valve must be open to provide return path for service water. Fire induced circuit failure to valve QSP16V0508 and QSP16V0506 could result in spurious isolation of return line. This failure challenges the Vital Auxiliaries Nuclear Safety Performance Criterion. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		

1

т

Fire Area ID: Compliance Basis:	2-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Fire Area Definition
Fire Zone ID	Description	
2335-U1	2335 Load Center Room, Train A	
2343-U1	2343 Load Center Room, Train A	
2346-U1	2346 Switchgear and M-G Set Room	

Fire Safety Analysis Data Manager (4.1)



.

Attachment C Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

14

	in A Switchgear & Load Center Rooms ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.	 14	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump via Train B power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train B charging pump or swing charging pump via Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	·	
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.		
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		

.

2

	141-U1 - Train A Switchgear & Load Center Rooms A 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evalua		Performance Goals	
Performance Goal	Method of Accomplishment	Comments		
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Tra and TDAFW pump supplying Steam Generator 1A/1B/1C. I isolated to prevent uncontrolled cooldown.			
6 Process Monitoring	 Shutdown Margin - Shutdown margin is monitored by so detector Ch 1/Ch 2. RCS Pressure - RCS pressure is m narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and pressure for Loop 1/Loop 3. Pressurizer Level - Pressur monitored by PZR level Ch 1/Ch 2/Ch 3. RCS Tempera 1/Loop 2/Loop 3 temperature is monitored by loop hot and o RTDs. SG Pressure - Steam Generator 1A/1B/1C press monitored. SG Level - Steam Generator 1A/1B/1C level 	onitored by PZR I RCS wide range zer level is ure - RCS Loop old leg ure is		
7.1 Vital Auxiliaries – Electrical	 Electrical power is supplied by off-site power via SUT 1A generator EDG-2B. 4.16 kV and 600 V power is supplie B distribution equipment. 125 VDC power and 120 VAC by Train A/Train B equipment. 	l by Train A/Train		
7.2 Vital Auxiliaries – Service Water	Train B service water is provided with two service water pur recirculating to the pond or Train B service water is provide water pump in service recirculating to the pond and non-ess building loads isolated.	with one service		
7.3 Vital Auxiliaries – Component Co Water	oling Train B component cooling water is provided with non-esse	tial loads isolated.		
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room locations is provided with HVAC equipment corresponding t train.			

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled. Initiation of carbon dioxide suppression systems will not damage components needed for safe shutdown; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Run: 08/18/2012 22:11 Page: 1879 of 2430







Fire Area ID: Compliance Basis:	2-041-U1 - Train A Switchgear & Load Center Rooms Engineering Evaluation with simplifying deterministic assumptions Engineering Evaluat	ions			
Engineering Evaluation ID Revision	ENGDOC, SM-97-1561-001 Fire Barrier Penetration Seal Limiting Design Parameter Evaluation				
Inactive	Νο				
Functionally Equivalent	No				
Adequate for the Hazard	Yes				
Summary	Purpose:				
	Evaluate various penetration seals which, as a result of plant walkdowns of as built configurations, exhibited one or more Limiting Design Parameters (LDPs) which were outside limits previously established via qualification test reviews.				
	Bases for Acceptability:				
	The basis of the evaluation was to establish the acceptability of the field established configurations through either:				
	 Utilizing engineering judgment based on additional reviews of test reports to justify the LDP in question; Refinement of field judgments through review of design drawing/documentation; or Establishing additional technical bases which allowed reapplication of acceptance criteria for LDPs. 				
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3				
Inactive	No				
Functionally Equivalent	No				
Adequate for the Hazard	Yes				
Summary	Purpose:				
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.				
	Bases for Acceptability:				
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described, Elements with construction features equal to 3-hr boundaries were credited as such, 				

Fire Safety Analysis Data Manager (4.1)

.

Run: 08/18/2012 22:11 Page: 1880 of 2430

Fire Area ID: Compliance Basis:	2-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Engineering Evaluations

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

1

Fire Safety Analysis	Bata Manager (4.1)
----------------------	--------------------







 Fire Area ID:
 2-041-U1 - Train A Switchgear & Load Center Rooms
 Required Fire Protection Systems and Features

 Compliance Basis:
 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions

Required FP System(s)/Feature(s)	Description	Required By	Comments	
Detection	2A-39 [2335, 2343, 2346]	EEEE/LA	Required to support a fire area boundary evaluation.	
Detection	2A-39 [2335, 2343, 2346]	Risk Criteria	Required to meet risk criteria.	
Detection	2A-39 [2335, 2343, 2346]	DID Criteria	Required to meet DID criteria.	1
Gaseous Suppression	2A-37	EEEE/LA	Required to support a fire area boundary evaluation.	
Gaseous Suppression	2A-37	Risk Criteria	Required to meet risk criteria.	
Gaseous Suppression	2A-37	DID Criteria	Required to meet DID criteria.	
Saseous Suppression	2A-38	EEEE/LA	Required to support a fire area boundary evaluation.	
Gaseous Suppression	2A-38	Risk Criteria	Required to meet risk criteria.	
Baseous Suppression	2A-38	DID Criteria	Required to meet DID criteria.	
Baseous Suppression	2A-40 [2335, 2343]	EEEE/LA	Required to support a fire area boundary evaluation.	
Gaseous Suppression	2A-40 [2335, 2343]	Risk Criteria	Required to meet risk criteria.	
Gaseous Suppression	2A-40 [2335, 2343]	DID Criteria	Required to meet DID criteria.	
Gaseous Suppression	2A-41	EEEE/LA	Required to support a fire area boundary evaluation.	
Gaseous Suppression	2A-41	Risk Criteria	Required to meet risk criteria.	
Gaseous Suppression	2A-41	DID Criteria	Required to meet DID criteria.	
Gaseous Suppression	2A-42 [2343]	EEEE/LA	Required to support a fire area boundary evaluation.	
Gaseous Suppression	2A-42 [2343]	Risk Criteria	Required to meet risk criteria.	
Gaseous Suppression	2A-42 [2343]	DID Criteria	Required to meet DID criteria.	
Passive	One Hour Rated Cable	Risk Criteria	Required to meet risk criteria.	
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.	

Fire Area ID: Compliance Basis:	2-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Title	FRE for Fire Area 2-041-U1			
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with fire rated cables and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.			
ΔCDF	1.95E-07			
ΔLERF	5.10E-10			
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection and suppression systems were identified as required for DID.			
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.			
Comments				



1

•

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:11 Page: 1883 of 2430

1

Fire Area ID: Compliance Basis:	2-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
/FDR ID	U1-2-041-SEP-001
VFDR	Q1E21P0002A:STANDBY:ON/OFF, 1A CHARGING/HHSI PUMP - Q1E21P0002A - 1C Charging/HHSI Pump; Q1R43E0001A - Sequencer Bus 1F. The pump is normally in Standby, required off, required off; sequencer normally available, required available, required to turn off pump to prevent overcharging, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	R
	1 1
VFDR ID	U1-2-041-SEP-002
VFDR	Q1R15A0006:ENERGIZED:ENERGIZED-SUT1A, 4160V SWITCHGEAR BUS 1F - Q1R15A0006 - 4160V Switchgear Bus 1F. The bus is normally in energized, required energized to supply loads. Fire induced cable damage can disable the bus, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-2-041-SEP-004
VFDR	Q1R15A0503:ENERGIZED:ENERGIZED-BUS1F, 4160V SWITCHGEAR BUS 1H - Q1R43E0503 - 4160V Switchgear Bus 1H. The bus is normally energized, required energized to support service water to pond for HVAC support of Bus 1F. The loss of sequencer can disable service water support for diesel generator, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U1-2-041-SEP-005

U

Fire Area ID: Compliance Basis:	2-041-U1 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q1R16B0508:ENERGIZED:ENERGIZED-U1, 600V LOAD CENTER 1R/2R - Q1R16B0508 - 600V Load Center 1R/2R. The load center is normally energized, required energized to support EDG 1-2A. Fire induced cable damage can disable the diesel generator to load onto Bus 1F and a challenge to all Nuclear Safet Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-2-041-SEP-006
VFDR	Q1R17B0509:ENERGIZED:ENERGIZED-U1, MOTOR CONTROL CENTER 1S - Q1R17B0509 - Motor Control Center 1S. The MCC is normally energized, required energized to support EDG 1-2A. Fire induced cable damage can disable the diesel generator to load onto Bus 1F and a challenge to all Nuclear Safet Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-2-041-SEP-007
VFDR	Q1R43E0001A:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 1F - Q1E21P0002A - 1C Charging/HHSI Pump; Q1R43E0001A - Sequencer Bus 1F The pump is normally in Standby, required off, required off; sequencer normally available, required available, required to turn off pump to prevent overcharging and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U1-2-041-SEP-008

Fire Area ID: Compliance Basis:					
VFDR					
Disposition	This condition was evaluated for compliance us applicable risk, defense-in-depth, and safety m	sing the performance-based approach of N argin criteria were satisfied without further	IFPA 805, Section 4.2.4. A fire risk evaluation action (VFDR not modeled in Fire PRA).	determined that	
		1. 1.	ŀ.		
		:			
			1		

- 11

1

Fire Area ID: 2-041-U2 - Train A Switchgear & Load Center Rooms Compliance Basis: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		Fire Area Definition
Fire Zone ID	Description	
2335-U2	2335 Load Center Room, Train A	
2343-U2	2343 Load Center Room, Train A	
2346-U2	2346 Switchgear and M-G Set Room	

Fire Safety Analysis Data Manager (4.1)





.

	rain A Switchgear & Load Center Rooms ection 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump via Train B power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train B charging pump or swing charging pump via Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance -based approach tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves.	· • :	
4.1 RCS Pressure Control - Pressure Transien	Undesired depressurization due to inadvertent spray is prevented by ensuring normal and auxiliary spray valves remain closed and the Loop 1 and Loop 2 RCPs are performance-based approaxh shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with performance-based approach Train B PORV for pressure reduction and Pressurizer Heater Group B for pressure increase.		
	· · · · · · · · · · · · · · · · · · ·		

•

	2-041-U2 - Train A Switchgear & Load Center Rooms JFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	J2 - Train A Switchgear & Load Center Rooms 305, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Performance Goal	Method of Accomplishment	Comments		
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train B MDAFW pump supplying Steam Generator 2C. Main feed is isolated to prevent uncontrolled cooldown.			
6 Process Monitoring	 Shutdown Margin - Performance-based approach shutdown margin is monitored. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 4. RCS Temperature - Performance-based approach RCS Loop 3 temperature is monitored by loop hot and cold leg RTDs. SG Level - Steam Generator 2A/2B/2C pressure is monitored. SG Level - Steam 			
7.1 Vital Auxiliaries – Electrical	1.Electrical power is supplied by diesel generator EDG-2B.2.4.16 kV and 600 V power is supplied by Train B distribution equipment.3.125 VDC power and 120 VAC power is supplied by Train B equipment.			
7.2 Vital Auxiliaries – Service Wate	r Train B service water is provided with two service water pumps in service recirculating to the pond or Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.			
7.3 Vital Auxiliaries – Component C Water	Cooling Train B component cooling water is provided with non-essential loads isolated.			
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.			

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled. Initiation of carbon dioxide suppression systems will not damage components needed for safe shutdown; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Run: 08/18/2012 22:11 Page: 1889 of 2430





Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Engineering Evaluation ID Revision	ENGDOC, SM-97-1561-001 Fire Barrier Penetration Seal Limiting Design Parameter Evaluation
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	Evaluate various penetration seals which, as a result of plant walkdowns of as built configurations, exhibited one or more Limiting Design Parameters (LDPs) which were outside limits previously established via qualification test reviews.
	Bases for Acceptability:
	The basis of the evaluation was to establish the acceptability of the field established configurations through either:
	 Utilizing engineering judgment based on additional reviews of test reports to justify the LDP in question; Refinement of field judgments through review of design drawing/documentation; or Establishing additional technical bases which allowed reapplication of acceptance criteria for LDPs.
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Purpose:
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as well as the shared areas such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a documented/credited 3-hr rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.
	Bases for Acceptability:
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described, Elements with construction features equal to 3-hr boundaries were credited as such,

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:11 Page: 1890 of 2430

1

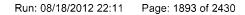
Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center R NFPA 805, Section 4.2.4.2 Performance-Based	Rooms Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Engineering Evaluations			
	· · · · · · · · · · · · · · · · · · ·					
	 The evaluation demonstrates that elements will 	ith construction features not equivalent to 3-hr rated boundaries are adequate fo	r the hazard.			
		÷				
		:				
	· · · · · ·	·				
		"				
ire Safety Analysis Data Ma	inager (4.1)	Farley Run: 08/18/2	2012 22:11 Page: 1891 of 243			

 Fire Area ID:
 2-041-U2 - Train A Switchgear & Load Center Rooms
 Required Fire Protection Systems and Features

 Compliance Basis:
 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions

Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-39 [335, 2343, 2346]	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-39 [335, 2343, 2346]	Risk Criteria	Required to meet risk criteria.
Detection	2A-39 [335, 2343, 2346]	DID Criteria	Required to meet DID criteria.
Gaseous Suppression	2A-37	EEEE/LA	Required to support a fire area boundary evaluation.
Gaseous Suppression	2A-37	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	2A-37	DID Criteria	Required to meet DID criteria.
Gaseous Suppression	2A-38	EEEE/LA	Required to support a fire area boundary evaluation.
Gaseous Suppression	2A-38	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	2A-38	DID Criteria	Required to meet DID criteria.
Gaseous Suppression	2A-40 [2335, 2343]	EEEE/LA	Required to support a fire area boundary evaluation.
Gaseous Suppression	2A-40 [2335, 2343]	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	2A-40 [2335, 2343]	DID Criteria	Required to meet DID criteria.
Gaseous Suppression	2A-41	EEEE/LA	Required to support a fire area boundary evaluation.
Gaseous Suppression	2A-41	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	2A-41	DID Criteria	Required to meet DID criteria.
Gaseous Suppression	2A-42	Risk Criteria	Required to meet risk criteria.
Gaseous Suppression	2A-42	DID Criteria	Required to meet DID criteria.
Passive	One Hour Rated Cable	Risk Criteria	Required to meet risk criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Passive	Restricted transient controls	DID Criteria	Required to meet DID criteria.
Procedures / Guidance		Risk Criteria	Improvements to procedures necessary to incorporate recovery actions required to mee risk criteria.
Modifications		Risk Criteria	Modification to install a fuse for cable 2VAJ5007L in panel Q2H25L004-A and to replace trip device in panel Q2R42B0001A, breaker LA13.
Modifications		DID Criteria	Modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available.

Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Title	FRE for Fire Area 2-041-U2			
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth an safety margins. The fire risk evaluation determined that with modification(s), specified recovery actions, fire rated cable, and the installed detection and supression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.			
ΔCDF	1.69E-06			
Δ LERF	2.34E-08			
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, modification to provide Train B power to the temperature recorder to maintain RCS temperature indication for Loop 2 when Train A power is not available, enhanced transient restrictions and the installed detection and in cabinet CO2 suppression systems were identified as required for DID.			
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained."			
Comments				



Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDRs
VFDR ID	U2-2-041-ASSO-001	
VFDR	Q2R15A0007:ENERGIZED:ENERGIZED-EDG2B, 4160V SWITCHGEAR BUS 2G - Q2R15A0007 - 4160V Switchgear Bus 2G. The switchgear is normal energized required energized. Fire induced cable damage to load power cable concurrent with fault on breaker control circuit can prevent power to bus r place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of 805, Section 4.2.4.	may
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-041-IA-001	
VFDR	Q2B31V0061:CLOSED:OPEN/CLOSED, PRESSURIZER POWER OPERATED RELIEF VALVE - This component requires instrument air to perform its credited function. Instrument air is assumed to be unavailable in this fire area because air loss paths have not been identified. Q2B31V0061 - Pressurize Operated Relief Valve. The normally closed PORV valve required to cycle to control RCS pressure transient. Fire induced damage to instrument air components may result in spuriously closing of the valves, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criter This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for complian using the performance-based approach of NFPA 805, Section 4.2.4.	er Power eria.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that r actions(s) are required to meet applicable risk criteria.	ecovery
VFDR ID	U2-2-041-SEP-001	
VFDR	N2B21TR0410:AVAILABLE-TE420:AVAILABLE-TE420, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE420) - RCS Cold I Temperature Recorder TR-410; N2B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 2 indicators are normally availa only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuc Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirement Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	ible, clear
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.	

Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-041-SEP-002
VFDR	N2B21TR0413:AVAILABLE-TE423:AVAILABLE-TE423, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N2B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 2 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-041-SEP-003
VFDR	N2B21TR0410:AVAILABLE-TE430:AVAILABLE-TE430, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 3 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.
VFDR ID	U2-2-041-SEP-004
VFDR	N2B21TR0413:AVAILABLE-TE433:AVAILABLE-TE433, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N2B21TR0410 (TE430) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE433) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 3 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that modification(s) are required to meet applicable DID criteria.











Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR ID	U2-2-041-SEP-005
VFDR	Q2B31L0001A:ON/OFF:OFF, PRESSURIZER HEATER GROUP 2A DISTRIBUTION PANEL - Q2B31L0001A - Pressurizer Heater Group 2A Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-041-SEP-006
VFDR	N2B31L0001C:ON:OFF, PRESSURIZER HEATER GROUP 2C DISTRIBUTION PANEL - N2B31L0001C - Pressurizer Heater Group 2C Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage can prevent ability to trip heater, and a challenge to
· .	the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-041-SEP-007
VFDR	N2B31L0001D:ON:OFF, PRESSURIZER HEATER GROUP 2D DISTRIBUTION PANEL - N2B31L0001D - Pressurizer Heater Group 2D Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
	U2-2-041-SEP-008

Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rc NFPA 805, Section 4.2.4.2 Performance-Based A		nplifying deterministic assumptions	VFDRs
VFDR	Pump; Q2E11V0026A - Containment Sump to 2A damage to instruments cabinets power supplies or borated water to charging pump, and a challenge	A RHR Pump. The valves are normally generate SIAS after battery depletion o to the Reactivity Control and RCS Inve nistic requirements of Section 4.2.3 of I	E ENCAPSULATION) - Q2E11V0025A - Containme closed, required closed to prevent loss of RWST to r environmental failure can spuriously operate valve entory and Pressure Control Nuclear Safety Perform NFPA 805. This is a Separation Issue. Evaluate for	Sump. Fire induced s to cause failure of nance Criteria. This
Disposition	This condition was evaluated for compliance usin applicable risk, defense-in-depth, and safety mar		NFPA 805, Section 4.2.4. A fire risk evaluation dete r action.	rmined that
VFDR ID	U2-2-041-SEP-009		<u>.</u>	adamanda ya Amanda aman aman ang mang dan dan dan yinang tang dan ang mang pang dan sa
VFDR	Containment Sump to 2A RHR Pump. The valves cabinets power supplies generate SIAS after batt charging pump, and a challenge to the Reactivity	s are normally closed, required closed t tery depletion or environmental failure of Control and RCS Inventory and Press irements of Section 4.2.3 of NFPA 805	1V0025A - Containment Sump to 2A RHR Pump; Q o prevent loss of RWST to Sump. Fire induced dam can spuriously operate valves to cause failure of bor ure Control Nuclear Safety Performance Criteria. Th . This is a Separation Issue. Evaluate for compliance	age to instruments ated water to is condition
Disposition	This condition was evaluated for compliance usin applicable risk, defense-in-depth, and safety man		NFPA 805, Section 4.2.4. A fire risk evaluation dete r action.	rmined that
VFDR ID	U2-2-041-SEP-012			
VFDR	Distribution Panel 2B; Q2R43E0001A - Sequence panel normally energized, required energized. Fir to the RCS Inventory and Pressure Control Nucle	er Bus 2F. The pump is normally in Sta re induced cable damage and cascadin ear Safety Performance Criteria. This co	mp; Q2E21P0002B - 2B Charging Pump Q2R41L00 ndby, required off; sequencer normally available, re ig power supply failures can prevent tripping the pur pondition represents a variance from the deterministic is performance-based approach of NFPA 805, Sect	quired available, and nps, and a challenge requirements of
Disposition	This condition was evaluated for compliance usin applicable risk, defense-in-depth, and safety mar		NFPA 805, Section 4.2.4. A fire risk evaluation dete r action.	rmined that
VFDR ID	U2-2-041-SEP-013		· · · · · · · · · · · · · · · · · · ·	
Fire Safety Analysis Data Manag	ger (4.1)	Farley	Run: 08/18/2012 22:11	Page: 1897 of 2430

Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN A, 2B CHARGING PUMP - Q2E21P0002A - 2A Charging Pump; Q2E21P0002B - 2B Charging Pump Q2R41L0001B - 125Vdc Distribution Panel 2B; Q2R43E0001A - Sequencer Bus 2F. The pump is normally in Standby, required off; sequencer normally available, required available, and panel normally energized, required energized. Fire induced cable damage and cascading power supply failures can prevent tripping the pumps, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-041-SEP-014		
VFDR	Q2E21V0016A:CLOSED:CLOSED, HHSI TO RCS COLD LEG ISOLATION - Q2E21V0016A - HHSI to RCS Cold Leg Isolation. The valve is normally closed, required closed to prevent charging pump run out. Fire induced damage generates SIAS signal to cause failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-041-SEP-015		
VFDR	Q2E21V0016B:CLOSED:CLOSED-TRAIN B, HHSI TO RCS COLD LEG ISOLATION - Q2E21V0016B - HHSI to RCS Cold Leg Isolation. The valve is normally closed, required closed to prevent charging pump run out. Fire induced damage generates SIAS signal to cause failure of charging pump, and a challenge to the Reactivity Control and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		

	U2-2-041-SEP-016		

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR Q2E21V0258:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q2E21V0258 - Charging Pumps to Regen HX. The valve is normally open to maintain RCS inventory. Fire induced spurious SIAS signal generated once the battery is depleted may close the valve preventing ability to and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a vadeterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based ap 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-041-SEP-017	
VFDR	Q2E21V0257:OPEN:OPEN, CHARGING PUMPS TO REGEN HX - Q2E21V0257 - Charging Pumps to Regen HX. The valve is normally open, required to open to maintain RCS inventory. Fire induced spurious SIAS signal generated once the battery is depleted may close the valve preventing ability to provide charging, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-041-SEP-018	
VFDR	Q2E21V0347:MODULATED:MODULATE, CHARGING FLOW CONTROL VALVE - Q2E21V0347 - Charging Flow Control Valve. The valve is normally throttled, required to throttle to maintain RCS inventory. Fire induced damage due to instrument air components and cascading power supply failure prevent ability to maintain reactivity and inventory control, and a challenge to the Reactivity and RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-041-SEP-019	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:11 Page: 1899 of 2430



.



Fire Area ID: Compliance Basis:	5	
VFDR Q2E21V0376A:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. To open, required open to supply VCT to charging pump. Fire induced damage to instruments cabinets power supplies generate SIAS after the environmental failure can spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressur Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-041-SEP-020	
VFDR	Q2E21V0376B:OPEN:OPEN, VCT OUTLET ISOLATION - Q2E21V0376A - VCT Outlet Isolation; Q2E21V0376B - VCT Outlet Isolation. The valve is normally open, required open to supply VCT to charging pump. Fire induced damage to instruments cabinets power supplies generate SIAS after battery depletion or environmental failure can spuriously operate valves to cause failure of charging pump, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-041-SEP-021	
VFDR	Q2E11LR3594B:AVAILABLE:AVAILABLE, POST ACCIDENT CONTAINMENT WATER LEVEL - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E0001A - Sequencer Bus 2F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced cable damage, spurious SIAS signal and / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	U2-2-041-SEP-022	

Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	VFDR		
VFDR	Q2E11P0001B:OFF:ON/OFF, 2B RHR/LHSI PUMP - Q2E11P0001A - 2A RHR/LPSI Pump; Q2E11P0001B - 2B RHR/LPSI Pump; Q2R43E000 Bus 2F. The pump is normally off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced cable dama SIAS signal and / or damage to sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay He NPO Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 80 Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	off, required off to prevent pump damage prior to transitioning to a NPO mode shutdown. Fire induced cable damage, spurious sequencer may spuriously start pump, and a challenge to the RCS Inventory and Pressure Control and Decay Heat Removal ince Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determine applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	əd that		
VFDR ID	U2-2-041-SEP-023			
VFDR	N2C55NI0031A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-31A - N2C55NI0031A - Source Range Count Rate 31A and Q2R21L0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indicator NI-32A and Q2R21L0001B Instrument Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Pe Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evalu compliance using the performance-based approach of NFPA 805, Section 4.2.4.	- 120V Vital AC power supply erformance		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determine applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	əd that		
VFDR ID	U2-2-041-SEP-024			
VFDR	N2C55NI0032A:AVAILABLE:AVAILABLE, SOURCE RANGE COUNT RATE INDICATOR NI-32A - N2C55NI0031A - Source Range Count Rate I 31A and Q2R21L0001A - 120V Vital AC Instrument Panel 2A; N2C55NI0032A - Source Range Count Rate Indicator NI-32A and Q2R21L0001B Instrument Panel 2B. The indicator is normally available, required available to monitor shutdown margin. Fire induced damage due to cascading failures prevent the ability to monitor the achievement of adequate shutdown margin, and a challenge to the Reactivity Control Nuclear Safety Pe Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evalu compliance using the performance-based approach of NFPA 805, Section 4.2.4.	- 120V Vital AC power supply erformance		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determine applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	ed that		
VFDR ID	U2-2-041-SEP-025			
Fire Safety Analysis Data	a Manager (4.1) Farley Run: 08/18/2012 22:11 Pa	age: 1901 of 2430		

.4

Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
VFDR Q2N11PV3371B:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q2N11PV3371B - Main Steam Atmos Relief. The valve is normal to cycle to control steam generator pressure. Fire induced damage from instrument air components and cascading power supply failures pre control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represer the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-bas NFPA 805, Section 4.2.4.			
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.		
VFDR ID	U2-2-041-SEP-026		
VFDR	Q2N11PV3371C:CLOSED:MODULATE, MAIN STEAM ATMOS RELIEF - Q2N11PV3371C - Main Steam Atmos Relief. The valve is normally closed, required to cycle to control steam generator pressure. Fire induced damage from instrument air components and cascading power supply failures prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that recovery actions(s) are required to meet applicable risk criteria.		
VFDR ID	U2-2-041-SEP-027		
VFDR	Q2N12V0001A:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235A - Q2N12V0001A - TDAFP Steam Supply Isolation Valve HV3235A. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cable damage and cascading power supply to instruments cabinets generate a spurious signal, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
	U2-2-041-SEP-028		

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR Q2N12V0001B:CLOSED:CLOSED, TDAFP STEAM SUPPLY ISOLATION VALVE HV3235B - Q2N12V0001B - TDAFP Steam Supply Isolation HV3235B. The valve is normally closed, required closed to prevent uncontrolled TDAFW supply to steam generator and overfill. Fire induced cascading power supply to instruments cabinets generate a spurious signal, and a challenge to the Decay Heat Removal Nuclear Safety Perf This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate f using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-041-SEP-029	
VFDR	Q2N23HV3228A:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1A - Q2N23P0002 - TDAFW Pump; Q2N23HV3228A - TDAFW Supply to Steam Generator 2A. The pump is normally off, required off and the valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced cable damage, instrument air component failures, cascading power supply failures and spurious actuation signals may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition .	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-041-SEP-030	
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228A - TDAFW Supply to Steam Generator 2A. The pump is normally off, required off and the valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced cable damage, instrument air component failures, cascading power supply failures and spurious actuation signals may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID U2-2-041-SEP-031		

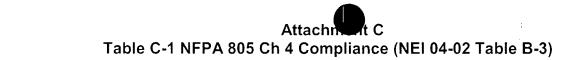
Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:11 Page: 1903 of 2430

Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions,		
VFDR	DR Q2N23HV3228B:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1B - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAF Steam Generator 2B. The pump is normally off, required off and the valve is normally open, required to close to isolate TDAFW to Steam Generator induced cable damage, instrument air component failures, cascading power supply failures and spurious actuation signals may spuriously operate challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirement 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-041-SEP-032		
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228B - TDAFW Supply to Steam Generator 2B. The pump is normally off, required off and the valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced cable damage, instrument air component failures, cascading power supply failures and spurious actuation signals may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
VFDR ID	U2-2-041-SEP-033		
VFDR	Q2N23HV3228C:OPEN:THROTTLED, TDAFW SUPPLY TO STEAM GENERATOR 1C - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 2C. The pump is normally off, required off and the valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced cable damage, instrument air component failures, cascading power supply failures and spurious actuation signals may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.		
	U2-2-041-SEP-034		

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms Aasis: NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2N23P0002:OFF:ON/OFF, TURBINE DRIVEN AUX FEEDWATER PUMP - Q2N23P0002 - TDAFW Pump; Q2N23HV3228C - TDAFW Supply to Steam Generator 2C. The pump is normally off, required off and the valve is normally open, required to close to isolate TDAFW to Steam Generator. Fire induced cable damage, instrument air component failures, cascading power supply failures and spurious actuation signals may spuriously operate valve, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-041-SEP-035	
VFDR	Q2B41P0001A:ON:OFF, RCP 2A - Q2B41P0001A - RCP 2A. The pump is normally on, required off to prevent RCS inventory losses. Fire induced cable damage and cascading power supply failures may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-041-SEP-036	
VFDR	Q2B41P0001B:ON:OFF, RCP 2B - Q2B41P0001B - RCP 2B. The pump is normally on, required off to prevent RCS inventory losses. Fire induced cable damage and cascading power supply failures may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	- U2-2-041-SEP-037	



Fire Area ID: Compliance Basis:	2-041-U2 - Train A Switchgear & Load Center Rooms NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2B41P0001C:ON:OFF, RCP 2C - Q2B41P0001C - RCP 2C. The pump is normally on, required off to prevent RCS inventory losses. Fire induced cable damage and cascading power supply failures may prevent pump trip, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	2-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		
Fire Zone ID	Description		
2319-U1	2319 Corridor - Train B		
2339-U1	2339 Corridor - Train A		
2345-U1	2345 Hallway - Train A		
		1	
	·		

.



Fire Area ID:2-042-U1 - AuCompliance Basis:NFPA 805, Se	x Building Hallways & Corridor ction 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions	Performance Goals
Performance Goal	Method of Accomplishment	Comments	
1 Primary Control Station	Plant shutdown is performed from the Control Room.		
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.		
2.2 Reactivity Control - Maintain Subcritical Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump or swing charging pump via Train B power.		
3.1 RCS Inventory Control - RCS Makeup	RCS inventory is controlled using Train B charging pump or swing charging pump via Train B power aligned to the RWST.		
3.2 RCS Inventory Control - Isolate Leakage Paths	Normal letdown is isolated using orifice isolation valves, a letdown isolation valve, or a letdown path containment isolation valve. Excess letdown is isolated using one or more excess letdown or containment isolation valves. PZR PORV leakage paths are isolated using Train A PORV and Train B PORV. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.		·
3.3 RCS Inventory Control - RCP Seal Integrity	Maintain RCP Seal Integrity - RCP seal integrity is maintained by tripping all RCPs, maintaining normal seal injection using Train B charging pump or swing charging pump via Train B power, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	• •	
4.1 RCS Pressure Control - Pressure Transient	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are shut off. Undesired pressure increase is prevented by deenergizing all pressurizer heater groups.		
4.2 RCS Pressure Control - Positive Pressure Control	Positive control of RCS pressure is accomplished with Train A PORV, Train B PORV or aux spray for pressure reduction and Pressurizer Heater Group A/B for pressure increase.		

	42-U1 - Aux Building Hallways & Corridor PA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions		Performance Goals
Performance Goal	Method of Accomplishment	Comments	
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train B MDAFW pump and TDAFW pump supplying Steam Generator 1A/1B/1C. Main feed is isolated to prevent uncontrolled cooldown.	2	
6 Process Monitoring	1. Shutdown Margin - Shutdown margin is monitored by source range detector Ch 1/Ch 2. 2. RCS Pressure - RCS pressure is monitored by PZR narrow range Ch 1/Ch 2/Ch 3, PZR non-safety channel, and RCS wide range pressure for Loop 1/Loop 3. 3. Pressurizer Level - Pressurizer level is monitored by PZR level Ch 1/Ch 2/Ch 3. 4. RCS Temperature - RCS Loop 1/Loop 2/Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Steam Generator 1A/1B/1C level is monitored.		,
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by off-site power via SUT 1A/SUT 1B, diesel generator EDG-1B. 2. 4.16 kV and 600 V power is supplied by Train A/Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train A/Train B equipment.		
7.2 Vital Auxiliaries – Service Water	Train B service water is provided with two service water pumps in service recirculating to the pond or Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.		
7.3 Vital Auxiliaries – Component Co Water	poling Train B component cooling water is provided with non-essential loads isolated.		
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train A/Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.		

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Run: 08/18/2012 22:11 Page: 1909 of 2430





Attachm ft C Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	2-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Eng	ineering Evaluations
Engineering Evaluation ID Revision	ENGDOC, SM-97-1561-001 Fire Barrier Penetration Seal Limiting Design Parameter Evaluation		
Inactive	No		
Functionally Equivalent	No		
Adequate for the Hazard	Yes		
Summary	Purpose:		
	Evaluate various penetration seals which, as a result of plant walkdowns of as built configurations, exhibited one or more Limiti which were outside limits previously established via qualification test reviews.	ng Design Pa	rameters (LDPs)
	Bases for Acceptability:		
	The basis of the evaluation was to establish the acceptability of the field established configurations through either:		
	 Utilizing engineering judgment based on additional reviews of test reports to justify the LDP in question; Refinement of field judgments through review of design drawing/documentation; or Establishing additional technical bases which allowed reapplication of acceptance criteria for LDPs. 		
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3		
Inactive	No		
Functionally Equivalent	No		
Adequate for the Hazard	Yes		
Summary	Purpose:		
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block building such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines	a documente	
	Bases for Acceptability:		
	The fire areas, fire zones and rooms on both sides of the barrier were identified,		
	 The construction of the boundary and the potential issue with the element in question was described, 		
	 The fire hazards and fire protection features on both sides of the barrier were described, 		
	 Elements with construction features equal to 3-hr boundaries were credited as such, 		
Fire Safety Analysis Data Man	ager (4.1) Farley Run: 08/18	/2012 22:11	Page: 1910 of 2430

 Fire Area ID:
 2-042-U1 - Aux Building Hallways & Corridor
 Engineering Evaluations

 Compliance Basis:
 NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
 Engineering Evaluations

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.



	-042-U1 - Aux Building Hallways & Corridor Required Fire Protection Systems and Features IFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions			
Required FP System(s)/Feature(s)	Description	Required By	Comments	
Detection	2A-59	EEEE/LA	Required to support a fire area boundary evaluation.	
Detection	2A-59	Risk Criteria	Required to meet risk criteria.	
Detection	2A-59	DID Criteria	Required to meet DID criteria.	
Detection	2A-59	Separation	Required to support the use of MI cable.	
Detection	2A-59 [2345]	EEEE/LA	Required to support a fire area boundary evaluation.	
Detection	2A-59 [2345]	Risk Criteria	Required to meet risk criteria.	
Detection	2A-59 [2345]	DID Criteria	Required to meet DID criteria.	
Water Suppression	2A-59	EEEE/LA	Required to support a fire area boundary evaluation.	
Water Suppression	2A-59	Risk Criteria	Required to meet risk criteria.	
Water Suppression	2A-59	Separation	Required to support the use of MI cable.	
Water Suppression	2A-59 [2345]	EEEE/LA	Required to support a fire area boundary evaluation.	
Water Suppression	2A-59 [2345]	Risk Criteria	Required to meet risk criteria.	
Passive	One Hour Rated Cable	Risk Criteria	Required to meet risk criteria.	
Passive	One Hour Rated Cable	Separation	Required to support the NSCA	
Passive	One Hour Rated Cable	Risk Criteria	Required to meet risk criteria.	
Passive	One Hour Rated Cable	Separation	Required to support the NSCA.	
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.	

.

Fire Area ID: Compliance Basis:	2-042-U1 - Aux Building Hallways & Corridor Fire Risk Evaluation with simplifying deterministic assumptions Fire Risk Evaluation	
Title	FRE for Fire Area 2-042-U1	
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the implementation of fire reated cables and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.	
Δ CDF	2.21E-09	
ΔLERF	7.30E-12	
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, the installed detection system was identified as required for DID.	
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.	
Comments		

~

-



Fire Area ID: Compliance Basis:	2-042-U1 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U1-2-042-SEP-031	
VFDR	Q1R16B0508:ENERGIZED:ENERGIZED-U1, 600V LOAD CENTER 1R/2R - Q1R16B0508 - 600V Load Center 1R/2R. The bus is normally energized, required energized to support service water to pond for HVAC support of bus 1F. The loss of the bus is can cause failure of offsite power supply, and a challenge to electrical support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	 This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
	i* :	
VFDR ID	U1-2-042-SEP-037	
VFDR	Q2R43E0001A:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2F. The sequencer normally available, required available. Fire induced cable damage can prevent proper operation of loads, and a challenge to the electrical support Vital Auxiliaries Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

1

re Area ID: ompliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Bas	ed Approach - Fire Risk Evaluation with simplifying deterministic assumpt	Fire Area Definitio
Fire Zone ID 2319-U2 2339-U2 2345-U2	Description 2319 Corridor - Train B 2339 Corridor - Train A 2345 Hallway - Train A		
		· · · · ·	
		· · · · · ·	
e Safety Analysis Data №	100000r (1 1)	Farley Ru	n: 08/18/2012 22:11 Page: 1915 of 24

Fire Safety Analysis Data Manager (4.1)

N.

54

Run: 08/18/2012 22:11 Page: 1915 of 2430



	Building Hallways & Corridor tion 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
1 Primary Control Station	Plant shutdown is performed from the Control Room.	
2.1 Reactivity Control - Reactor Trip	Reactor is manually tripped from the Control Room.	
Conditions	Subcritical conditions are maintained by isolating the VCT to prevent boron dilution and by charging borated water from the RWST using Train B charging pump.	
	RCS inventory is controlled using Train B charging pump aligned to the RWST.	
Paths	Normal letdown is isolated using orifice isolation valves. Excess letdown is isolated using excess letdown isolation valves. PZR PORV leakage paths are isolated using Train A PORV and performance-based approach Train B PORV or block valve. The RCS to RHR high/low pressure interface is isolated using the Train A/Train B RHR inboard isolation valve and Train A/Train B RHR outboard isolation valve.	
	Maintain RCP Seal Integrity - RCP seal integrity is maintained by performance -based approach tripping all RCPs, maintaining normal seal injection using Train B charging pump, and preventing failure of the RCP thermal barriers. RCP seal injection paths are secured by isolating the supply and discharge seal injection lines. CCW to RCP thermal barriers are performance-based approach isolated using containment isolation valves or the CCW to RCP thermal barrier isolation valve.	
	Undesired depressurization due to inadvertent spray is prevented by ensuring auxiliary spray valve remains closed and the Loop 1 and Loop 2 RCPs are performance-based approach shut off. Undesired pressure increase is prevented by performance-based approach deenergizing all pressurizer heater groups.	
Control	Positive control of RCS pressure is accomplished with performance-based approach Train A PORV for pressure reduction and performance-based approach Pressurizer Heater Group A/B for pressure increase.	

	U2 - Aux Building Hallways & Corridor 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying	deterministic assumptions
Performance Goal	Method of Accomplishment	Comments
5 Decay Heat Removal	Decay heat removal during HSD is accomplished using Train B MDAFW pump supplying Steam Generator 2C. Main feed is performance-based approach isolated to prevent uncontrolled cooldown.	
6 Process Monitoring	1. Shutdown Margin - Performance-based approach shutdown margin is monitored. 2. RCS Pressure - Performance-based approach RCS pressure is monitored by PZR narrow range Ch 3, PZR non-safety channel, RCS wide range pressure for Loop 1. 3. Pressurizer Level - Performance-based approach pressurizer level is monitored by PZR level Ch 3. 4. RCS Temperature - Performance-based approach RCS Loop 3 temperature is monitored by loop hot and cold leg RTDs. 5. SG Pressure - Performance-based approach Steam Generator 2A/2B/2C pressure is monitored. 6. SG Level - Performance-based approach Steam Generator 2A/2B/2C level is monitored.	
7.1 Vital Auxiliaries – Electrical	1. Electrical power is supplied by diesel generator EDG-2B. 2. 4.16 kV and 600 V power is supplied by Train B distribution equipment. 3. 125 VDC power and 120 VAC power is supplied by Train B equipment.	
7.2 Vital Auxiliaries – Service Water	Train B service water is provided with two service water pumps in service recirculating to the pond or Train B service water is provided with one service water pump in service recirculating to the pond and non-essential turbine building loads isolated.	
7.3 Vital Auxiliaries – Component Coolir Water	g Performance-based approach Train B component cooling water is provided with non-essential loads isolated.	
7.4 Vital Auxiliaries – HVAC	Control Room cooling is provided by Train B HVAC. Room cooling at essential locations is provided with HVAC equipment corresponding to the service water train.	

Fire Suppression Activities Effect on Nuclear Safety Performance Criteria

Safe and stable conditions can be achieved and maintained utilizing equipment and cables that have been reviewed to be unaffected by the effects of fire suppression activities in adjacent areas. Essential equipment is protected from damage due to flooding from operation of the fire suppression system by drains and curbs and/or by mounting essential equipment on pedestals or supports. Discharge of manual suppression water to adjacent compartments is controlled; therefore, fire suppression activities will not adversely affect the plant's ability to achieve the nuclear safety performance criteria.

Run: 08/18/2012 22:11 Page: 1917 of 2430









Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Engineering Evaluations
Engineering Evaluation ID Revision	ENGDOC, SM-97-1561-001 Fire Barrier Penetration Seal Limiting Design Parameter Evaluation	
Inactive	Νο	
Functionally Equivalent	Νο	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	Evaluate various penetration seals which, as a result of plant walkdowns of as built configurations, exhibited one or more Limiting Des which were outside limits previously established via qualification test reviews.	sign Parameters (LDPs)
	Bases for Acceptability:	
	The basis of the evaluation was to establish the acceptability of the field established configurations through either:	
	 Utilizing engineering judgment based on additional reviews of test reports to justify the LDP in question; Refinement of field judgments through review of design drawing/documentation; or Establishing additional technical bases which allowed reapplication of acceptance criteria for LDPs. 	
Engineering Evaluation ID Revision	SM-C051326701-006 Identify Regulatory Fire Barriers 3	
Inactive	No	
Functionally Equivalent	No	
Adequate for the Hazard	Yes	
Summary	Purpose:	
	This report includes engineering equivalency evaluations for several fire area boundaries in Units 1 and 2 power block buildings, as w such as SWIS, RWIS and the Diesel Generator Building. The approach was to examine any boundary for which there was not a docur rated barrier. Evaluations were also included non-rated reach rod penetrations and separation between pressure sensing lines.	
	Bases for Acceptability:	
	 The fire areas, fire zones and rooms on both sides of the barrier were identified, The construction of the boundary and the potential issue with the element in question was described, The fire hazards and fire protection features on both sides of the barrier were described, Elements with construction features equal to 3-hr boundaries were credited as such, 	

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:11 Page: 1918 of 2430

枯

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	Engineering Evaluations

• The evaluation demonstrates that elements with construction features not equivalent to 3-hr rated boundaries are adequate for the hazard.

Fire Safety Analysis Data Manager (4.1)

Run: 08/18/2012 22:11 Page: 1919 of 2430





	042-U2 - Aux Building Hallways & Corridor FPA 805, Section 4.2.4.2 Performance-Ba		Required Fire Protection Systems and Features
Required FP System(s)/Feature(s)	Description	Required By	Comments
Detection	2A-59	EEEE/LA	Required to support a fire area boundary evaluation.
Detection	2A-59	Risk Criteria	Required to meet risk criteria.
Detection	2A-59	DID Criteria	Required to meet DID criteria.
Water Suppression	2A-59 [2319, 2339]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-59 [2319, 2339]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-59 [2345]	EEEE/LA	Required to support a fire area boundary evaluation.
Water Suppression	2A-59 [2345]	Risk Criteria	Required to meet risk criteria.
Water Suppression	2A-59 [2345]	DID Criteria	Required to meet DID criteria.
Passive	One Hour Rated Cable	Risk Criteria	Required to meet risk criteria.
Passive	Restricted transient controls	DID Criteria	Required to meet DID criteria.
Passive	Restricted transient controls	EEEE/LA	Required to support a fire area boundary evaluation.
Modifications		Risk Criteria	Modification to provide fuse or other electrical isolation device at the DC shunt connection point.

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Title	FRE for Fire Area 2-042-U2
Summary	A risk-informed, performance-based fire risk evaluation was performed for the fire area to address the variances from the deterministic requirements (VFDRs) of NFPA 805 Section 4.2.3. The acceptability of these VFDRs is based on the measured change in CDF and LERF and the maintenance of defense in depth and safety margins. The fire risk evaluation determined that with the implementation of fire rated cable, modification to provide fuse or other electrical isolation device at the DC shunt connection point, enhanced transient restrictions and the installed detection/suppression systems, the applicable risk, defense-in-depth, and safety margin criteria were satisfied.
ΔCDF	5.36E-08
Δ LERF	5.04 E-1 0
DID Maintained	The VFDRs and the associated Fire Area risk (CDF) and scenario consequences (CCDP values) were evaluated to identify general DID echelon imbalances. Potential methods to balance the DID features were identified ensuring an adequate balance of DID features is maintained for the Fire Area. As a result of the FRE for this area, enhanced transient restriction procedure and the installed detection and suppression systems were identified as required for DID.
Safety Margin Maintained	All analyses and assessment have been performed utilizing accepted techniques and industry accepted standards. In addition, safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty. As such, the Safety Margins are maintained.
Comments	





Attac Table C-1 NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3)

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-2-042-SEP-001	
VFDR	N2B31L0001E:ON:OFF, PRESSURIZER HEATER GROUP 2E DISTRIBUTION PANEL - N2B31L0001E - Pressurizer Heater Group 2E Distribution Panel. The Heater is normally in standby, required off to prevent RCS pressure transients. Fire induced cable damage can prevent ability to trip heater, and a challenge to the RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-002	
VFDR	N2B31LI0461:AVAILABLE:AVAILABLE, PRESSURIZER LEVEL INDICATOR LI-461 (PROTECTION CHANNEL III) - N2B31LI0460 - Pressurizer Level Indicator LI-460. The indicator is normally available, required available at least one indicator from pressurizer level is required to provide process monitoring of RCS level. Fire induced cable result in failure to monitor the RCS level, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-005	
VFDR	N2B31PI0457:AVAILABLE:AVAILABLE, PRESSURIZER PRESSURE INDICATOR PI-457 (PROTECTION CHANNEL III) - N2B31PI0457 - Pressurizer Pressure Indicator PI-457. The indicator is normally available, required available for pressurizer pressure monitoring. Fire induced cable damage prevents the ability to monitor the pressure, and a challenge to the performance monitoring of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-008	
Fire Safety Analysis Data	Manager (4.1) Farley Run: 08/18/2012 22:11 Page: 1922 of 2430	

.

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Co NFPA 805, Section 4.2.4.2 Performance	rridor e-Based Approach - Fire Risk Evaluation with sim	plifying deterministic assumptions	VFDR
VFDR	N2C22LI0496 - Steam Generator 1C Na steam generator is required to provide p a challenge to the process monitoring c	arrow Range Level Indicator . The indicator is nor process monitoring of steam generator level. Fire apability of Decay Heat Removal Nuclear Safety	EVEL INDICATOR LI-496 (PROTECTION CHANN mally available, required available at least one indi- induced cable result in failure to monitor the steam Performance Criteria. This condition represents a v aluate for compliance using the performance-based	cator from credited generator level, and variance from the
Disposition		ance using the performance-based approach of t afety margin criteria were satisfied without further		rmined that
			3	
VFDR ID	U2-2-042-SEP-009			
VFDR	indicator is normally available, required pressure. Fire induced cable damage re Heat Removal Nuclear Safety Performa	available at least one indicator steam generator position in failure to monitor the steam generator pro-	SURE - N2N11PI0475 - Steam Generator 2A Disch pressure is required to provide process monitoring of essure, and a challenge to the process monitoring of from the deterministic requirements of Section 4.2 ach of NFPA 805, Section 4.2.4.	of steam generator capability of Decay
Disposition		ance using the performance-based approach of t afety margin criteria were satisfied without further	NFPA 805, Section 4.2.4. A fire risk evaluation dete action.	rmined that
VFDR ID	U2-2-042-SEP-010			
VFDR	N2N11PI0476:AVAILABLE:AVAILABLE, STEAM GENERATOR 2A DISCHARGE PRESSURE - N2N11PI0476 - Steam Generator 2A Discharge Pressure. The indicator is normally available, required available at least one indicator steam generator pressure is required to provide process monitoring of steam generator pressure. Fire induced cable damage results in failure to monitor the steam generator pressure, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.		of steam generator capability of Decay	
Disposition		ance using the performance-based approach of N afety margin criteria were satisfied without further	NFPA 805, Section 4.2.4. A fire risk evaluation dete - action.	rmined that
VFDR ID	U2-2-042-SEP-011		· · ·	1 20
Fire Safety Analysis Data N	Manager (4.1)	Farley	Run: 08/18/2012 22:11	Page: 1923 of 2430
-				· ·

÷

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	N2N11PI0485:AVAILABLE:AVAILABLE, STEAM GENERATOR 2B DISCHARGE PRESSURE - N2N11PI0485 - Steam Generator 2B Discharge Pressure. The indicator is normally available, required available at least one indicator steam generator pressure is required to provide process monitoring of steam generator pressure. Fire induced cable damage results in failure to monitor the steam generator pressure, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-042-SEP-012
VFDR	N2N11PI0486:AVAILABLE:AVAILABLE, STEAM GENERATOR 2B DISCHARGE PRESSURE - N2N11PI0486 - Steam Generator 2B Discharge Pressure. The indicator is normally available, required available at least one indicator steam generator pressure is required to provide process monitoring of steam generator pressure. Fire induced cable damage results in failure to monitor the steam generator pressure, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-042-SEP-013
VFDR	N2N11PI0495:AVAILABLE:AVAILABLE, STEAM GENERATOR 2C DISCHARGE PRESSURE - N2N11PI0495 - Steam Generator 2C Discharge Pressure. The indicator is normally available, required available at least one indicator steam generator pressure is required to provide process monitoring of steam generator pressure. Fire induced cable damage results in failure to monitor the steam generator pressure, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-042-SEP-014

.

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	N2N11PI0496:AVAILABLE:AVAILABLE, STEAM GENERATOR 2C DISCHARGE PRESSURE - N2N11PI0496 - Steam Generator 2C Discharge Pressure. The indicator is normally available, required available at least one indicator steam generator pressure is required to provide process monitoring of steam generator pressure. Fire induced cable damage results in failure to monitor the steam generator pressure, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-016	
VFDR	Q2E16H0001C:STANDBY:ON, CHARGING/HHSI PUMP ROOM COOLER 2C - Q2E16H0001C - Charging/HHSI Pump Room Cooler 2C. The cooler is normally in standby, required on to support charging pump. Fire induced cable damage can disable the cooler, and a challenge to RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-017	
VFDR	Q2E16H0005B:STANDBY:ON, 2B AFW PUMP ROOM COOLER - Q2E16H0005B - 2A AFW Pump Room Cooler. The cooler is normally in standby, required on to support AFW pump. Fire induced cable damage may prevent equipment from functioning properly due inadequate environmental concerns, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	U2-2-042-SEP-018	

Fire Safety Analysis Data Manager (4.1)

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor ; VFDI NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
VFDR	Q2E21P0002B:ON:ON/OFF-TRAIN B, 2B CHARGING PUMP - Q2E21P0002B - 2B Charging Pump. The pump is normally in Standby, required off to prevent overcharging. Fire induced cable damage can spurious operate pump, and a challenge to RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-042-SEP-019
VFDR	Q2E21P0002C:ON:ON/OFF, 2C CHARGING PUMP - Q2E21P0002C - 2C Charging Pump. The pump is normally in Standby, required on to provide makeup capability. Fire induced cable damage can disable pump, and a challenge to RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-042-SEP-020
VFDR	Q2E21P0002C:ON:ON/OFF, 2C CHARGING PUMP - Q2E21P0002C - 2C Charging Pump. The pump is normally in Standby, required on to provide makeup capability. Fire induced cable damage can disable pump, and a challenge to RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-042-SEP-021
VFDR	N2F16LI4075B:AVAILABLE:AVAILABLE, RWST LEVEL INDICATOR LI-4075B - Q2F16LT0502 - RWST Level Indicator LI-4075B. The indicator is normally available, required available for RWST level. Fire induced cable damage result in failure to monitor the RWST level, and a challenge to the process monitoring capability of RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-022	
VFDR	Q2N11PV3371A:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Q2N11PV3371A- Main Steam Atmos Relief. The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage can spuriously open valve and prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	U2-2-042-SEP-023	
VFDR	Q2N11PV3371B:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Q2N11PV3371B- Main Steam Atmos Relief. The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage can spuriously open valve and prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-024	
VFDR	Q2N11PV3371C:CLOSED:CLOSED, MAIN STEAM ATMOS RELIEF - Q2N11PV3371C- Main Steam Atmos Relief. The valve is normally closed, required closed to control steam generator pressure. Fire induced cable damage can spuriously open valve and prevent the ability to control steam generator pressure, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
FDR ID	U2-2-042-SEP-025
/FDR	Q2N12HV3234B:OPEN:OPEN/CLOSED, TDAFWP STEAM SUPPLY WARM-UP ISOLATION - Q2N12HV3234A - TDAFP Steam Supply Warm-up Isolation. The valve is normally open, required closed to prevent uncontrolled steam loss. Fire induced cable damage may fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
/FDR ID	U2-2-042-SEP-026
VFDR	Q2N21V0001A:OPEN:CLOSED, A STEAM GENERATOR MAIN FEED STOP CHECK VALVE MOV3232A - N2N21P0001A - Condensate Pump 2A; N2N21P0001B - Condensate Pump 2B; N2N21P0001C - Condensate Pump 2C; Q2N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q2N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q2N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	. This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-042-SEP-027
VFDR	Q2N21V0001B:OPEN:CLOSED, B STEAM GENERATOR MAIN FEED STOP CHECK VALVE MOV3232B - N2N21P0001A - Condensate Pump 2A; N2N21P0001B - Condensate Pump 2B; N2N21P0001C - Condensate Pump 2C; Q2N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q2N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q2N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-2-042-SEP-028	
VFDR	Q2N21V0001C:OPEN:CLOSED, C STEAM GENERATOR MAIN FEED STOP CHECK VALVE MOV3232C - N2N21P0001A - Condensate Pump 2A; N2N21P0001B - Condensate Pump 2B; N2N21P0001C - Condensate Pump 2C; Q2N21V0001A - A Steam Generator Main Feed Stop Check Valve MOV3232A, Q2N21V0001B - B Steam Generator Main Feed Stop Check Valve MOV3232B, Q2N21V0001C - C Steam Generator Main Feed Stop Check Valve MOV3232C. The pumps are normally on required off, the valve is normally open, required closed to prevent steam generator overfill. Fire induced cable damage can fail pumps on and fail valve open, and a challenge to the Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
	U2-2-042-SEP-029	
VFDR	Q2P16FV3009A:OPEN:OPEN, SW FROM 2A CCW HX - Q2P16FV3009 - SW from 2A CCW Hx. The valve is normally open required open. Fire induced cable damage can close the valve and disable CCW system support, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-030	
VFDR	Q2P17P0001A:STANDBY:ON, 2A COMPONENT COOLING WATER PUMP - Q2P17P0001A - 2A Component Cooling Water Pump. The pump is normally in Standby, required on to provide cooling water support to charging pumps. Fire induced cable damage can disable pump, and a challenge to RCS Inventory and Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-031	
Fire Safety Analysis Data N	Manager (4.1) Farley Run: 08/18/2012 22:11 Page: 1929 of 2430	

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2R15A0007:ENERGIZED:ENERGIZED-EDG2B, 4160V SWITCHGEAR BUS 2G - Q2R15A0007 - 4160V Switchgear Bus 2G. The switchgear is normally energized required energized. Fire induced cable damage on breaker control circuit can prevent power to bus may place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-032	
/FDR	Q2R15A0506:ENERGIZED:ENERGIZED, 4160V SWITCHGEAR BUS 2L - Q2R15A0506 - 4160V Switchgear Bus 2L. The bus is normally energized, required energized to support service water to pond. The loss of bus can disable service water support for diesel generator, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-033	
/FDR	Q2R11B0005:ENERGIZED:ENERGIZED, STATION SERVICE TRANSFORMER 2E - Q2R16B0007 - 600V Load Center 2E and Q2R11B0005 - Station Service Transformer. The load center is normally energized required energized. Fire induced cable damage to load power cable can prevent power to bus may place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-034	

Fire Safety Analysis Data Manager (4.1)

Ľ

Run: 08/18/2012 22:11 Page: 1930 of 2430

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR	Q2R16B0007:ENERGIZED:ENERGIZED, 600V LOAD CENTER 2E - Q2R16B0007 - 600V Load Center 2E and Q2R11B0005 - Station Service Transformer. The load center is normally energized required energized. Fire induced cable damage to load power cable can prevent power to bus may place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-035	
VFDR	Q2R42E0001B:ENERGIZED:ENERGIZED, BATTERY CHARGER 2B - Q2R42E0001B - Battery Charger 2B. The charger is normally energized, required energized to support dc control power. Fire induced cable may disable electrical support, and a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-036	
VFDR	Q2R42E0002B:AVAILABLE:AVAILABLE, 125V BATTERY 2B - Q2R42B0002B - 125V Battery 2B. The battery is normally available required available. Fire induced cable damage can disable the dc power required for diesel generator and may place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-037	
VFDR	Q2R43A0505:STANDBY:ENERGIZED, 2B DIESEL GENERATOR - Q2R43A0505- 2B Diesel Generator. The diesel is normally in standby required running. Fire induced cable damage can prevent power from diesel generator and may place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	



Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-042-SEP-038
VFDR	Q2R43E0001B:AVAILABLE:AVAILABLE-SEQ/SHED, SEQUENCER BUS 2G - Q2R43E0001B - Sequencer Bus 2G. The sequencer is normally available required available. Fire induced cable damage can disable the sequencer required for diesel generator and may place plant in an unrecoverable condition, and a challenge to all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.
VFDR ID	U2-2-042-SEP-039
VFDR	Q2V47MOV3643:OPEN:OPEN, 2A BATTERY ROOM EXHAUST DAMPER - Q2V47MOV3643 - 2A Battery Room Exhaust Damper. The damper is normally open, required open to support battery room ventilation. Fire induced cable damage may disable electrical support, and a challenge to the all Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).
VFDR ID	U2-2-042-SEP-040 .
VFDR	N2B21TR0410:AVAILABLE-TE410:AVAILABLE-TE410, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 2 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.

~__

Fire Area ID: Compliance Basis:	2-042-U2 - Aux Building Hallways & Corridor NFPA 805, Section 4.2.4.2 Performance-Based Approach - Fire Risk Evaluation with simplifying deterministic assumptions	
VFDR ID	U2-2-042-SEP-041	
VFDR	N2B21TR0413:AVAILABLE-TE413:AVAILABLE-TE413, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N2B21TR0410 (TE410) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE413) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 2 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component power supply may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action (VFDR not modeled in Fire PRA).	
VFDR ID	U2-2-042-SEP-042	
VFDR	N2B21TR0410:AVAILABLE-TE420:AVAILABLE-TE420, RCS COLD LEG TEMPERATURE RECORDER TR-410 - N2B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 2 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component power supply may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Sectior 4.2.4.	
Disposition	This condition was evaluated for compliance using the performance-based approach of NFPA 805, Section 4.2.4. A fire risk evaluation determined that applicable risk, defense-in-depth, and safety margin criteria were satisfied without further action.	
VFDR ID	U2-2-042-SEP-043	
VFDR	N2B21TR0413:AVAILABLE-TE433:AVAILABLE-TE433, RCS HOT LEG TEMPERATURE RECORDER TR-413 - N2B21TR0410 (TE420) - RCS Cold Leg Temperature Recorder TR-410; N2B21TR0413 (TE423) - RCS Hot Leg Temperature Indicator TI-413. These RCS Loop 2 indicators are normally available, only one set of the indicators from credited Steam Generator RCS Loop is required available to provide process monitoring of Decay Heat Removal Nuclear Performance Criteria. Fire induced cable damage to component power supply may result in failure to monitor the decay heat removal, and a challenge to the process monitoring capability of Decay Heat Removal Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a Separation Issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	