Duke Energy Carolinas, LLC
McGuire Nuclear Station

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 2013

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Executive Summary

Duke Energy Carolinas, LLC will transition the McGuire Nuclear Station fire protection program to a new Risk-Informed, Performance-Based alternative per 10 CFR 50.48(c), "National Fire Protection Association Standard NFPA 805," which incorporates by reference NFPA 805. The licensing basis per Duke Energy Carolinas, LLC, McGuire Nuclear Station, Renewed Facility Operating License Condition 2.C.(4) will be superseded on both Units 1 and 2.

Section 1 of the Transition Report provides the introduction and background for NFPA 805 including the Duke Energy Carolinas, LLC Letters of Intent.

In 2005, Duke Energy Carolinas, LLC decided to transition the Fleet's fire protection licensing basis to the Risk Informed, Performance-Based alternative in 10 CFR 50.48(c). Duke Energy Carolinas, LLC submitted a letter of intent to the Nuclear Regulatory Commission on February 28, 2005 that stated Oconee Nuclear Station would transition as a Pilot followed by McGuire Nuclear Station and Catawba Nuclear Station to adopt NFPA 805 in accordance with 10 CFR 50.48(c). By letter dated April 18, 2006, Duke Energy Carolinas, LLC informed the Nuclear Regulatory Commission that McGuire Nuclear Station was starting transition. Due to evolving expectations for non-Pilot plant Fire Probabilistic Risk Assessment peer reviews, McGuire Nuclear Station requested a three year enforcement discretion period. By letter dated September 26, 2006, the Nuclear Regulatory Commission stated that a revision to its enforcement policy extending the NFPA 805 transition discretion period from 24 to 36 months had been published in the *Federal Register* (71 FR 19905) on April 18, 2006. Therefore, the extended discretion period for McGuire Nuclear Station was granted. By letter dated June 23, 2011, Duke Energy, (1) committed to submit a License Amendment Request by September 30, 2013, to transition to NFPA 805 in accordance with 10 CFR 50.48(c), and (2) requested that enforcement discretion for fire protection issues be extended to correspond with the License Amendment Request submittal commitment date. By letter dated July 28, 2011, the Nuclear Regulatory Commission accepted the submittal and found it consistent with SRM-SECY-11-0061 dated June 10, 2011. Therefore, the Nuclear Regulatory Commission granted the request to extend enforcement discretion in accordance with the Interim Enforcement Policy concerning Enforcement Discretion for Certain Fire Protection Issues as published in the Federal Register (76 FR 40777) on July 12, 2011.

Section 2 of the Transition Report provides an overview of the current Fire Protection Program Licensing Basis.

Section 3 of the Transition Report provides a summary of the transition process which consisted of a review and update of McGuire Nuclear Station documentation, including the development of a Fire Probabilistic Risk Assessment using NUREG/CR-6850 as guidance. This Transition Report summarizes the transition process and results. This Transition Report contains information:

- Required by 10 CFR 50.48(c).
- Recommended by guidance document Nuclear Energy Institute (NEI) 04-02, Revision 2, "Guidance for Implementing a Risk-informed, Performance-based

Fire Protection Program Under 10 CFR 50.48(c)", and appropriate Frequently Asked Questions.

- Recommended by guidance document Regulatory Guide 1.205, Revision 1, "Risk-Informed, Performance-Based Fire Protection for Existing Light Water Nuclear Power Plants."

Section 4 of the Transition Report provides a summary of compliance with the following NFPA 805 requirements:

- Fundamental Fire Protection Program Elements and Minimum Design Requirements
- Nuclear Safety Performance Criteria, including:
  - Non-Power Operational Modes
  - Fire Risk Evaluations
- Radioactive Release Performance Criteria
- Monitoring Program
- Program Documentation, Configuration Control, and Quality Assurance

Section 5 of the Transition Report provides regulatory evaluations and associated attachments, including:

- Changes to License Condition
- Changes to Technical Specifications, Orders, and Exemptions,
- Determination of No Significant Hazards and evaluation of Environmental Considerations.

The attachments to the Transition Report include detail to support the transition process and results.

Attachment H contains the approved Frequently Asked Questions not yet incorporated into the endorsed revision of NEI 04-02. These Frequently Asked Questions have been used to clarify the guidance in Regulatory Guide 1.205, NEI 04-02, and the requirements of NFPA 805 and in the preparation of this License Amendment Request.

Acronym List

AB	Auxiliary Building
AD	Standby Shutdown (Diesel)
AFW	Auxiliary Feedwater
AHJ	Authority Having Jurisdiction
ANS	American Nuclear Society
ANSI	American National Standards Institute
AOV	Air Operated Valve
AP	Abnormal Procedure
APCSB	Auxiliary and Power Conversion Systems Branch
ASD	Alternate Shutdown
ASME	American Society of Mechanical Engineers
ASP	Auxiliary Shutdown Panel
ASTM	American Society for Testing and Materials
BAT	Boric Acid Tank
BTP	Branch Technical Position
BTU	British Thermal Unit
BWR	Boiling Water Reactor
BWROG	Boiling Water Reactor Owners Group
CA	Auxiliary Feedwater
CAFTA	Computer Aided Fault Tree Analysis
CAST	Auxiliary Feedwater Storage Tank
CC	Capability Category
CCDP	Conditional Core Damage Probability
CCF	Common Cause Failure
CCFP	Conditional Containment Failure Probabilities

CCW	Component Cooling Water
CDF	Core Damage Frequency
CF	Feedwater
CFAST	Consolidated Fire and Smoke Transport
CFR	Code of Federal Regulation
CLERP	Combined Large Early Release Probability
CM	Condensate
CMEB	Chemical Engineering Branch
CNS	Catawba Nuclear Station
CO_2	Carbon Dioxide
CPT	Control Power Transformer
CR	Control Room
CSD	Cold Shutdown
CT	Current Transformer
DC	Direct Current
ΔCDF	Change in Core Damage Frequency
ΔLERF	Change in Large Early Release Frequency
DG	Diesel Generator
DID	Defense-in-Depth
Duke Energy	Duke Energy Carolinas, LLC
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EDM	Engineering Directives Manual
EEEE	Existing Engineering Equivalency Evaluation
EIR	Engineering Information Record
EMT	Electrical Metallic Tubing

ENA	In-Core Instrumentation
E/P	Electric/Pneumatic
EPE	600 VAC Essential Auxiliary Power
EPRI	Electric Power Research Institute
ERFBS	Electrical Raceway Fire Barrier System
ES	Equipment Select
ESD	Engineering Support Document
ESF	Engineering Safety Feature
F&O	Fact and Observation
FA	Fire Area
FAQ	Frequently Asked Question
FHA	Fire Hazards Analysis
FM	Factory Mutual
FMEA	Failure Modes and Effects Analysis
FP	Fire Protection
FPIE	Full Power Internal Events
FPR	Fire Protection Report
FPRA	Fire Probablistic Risk Assessment
FRE	Fire Risk Evaluation
FSAR	Final Safety Analysis Report
FSS	Fire Scenario Selection
FW	Refueling Water
FWST	Refueling Water Storage Tank
GDC	General Design Criteria
HEAF	High Energy Arc Fault
HEP	Human Error Probability

HFE	Human Failure Event
HGL	Hot Gas Layer
HRA	Human Reliability Analysis
HRE	Higher Risk Evolution
HRR	Heat Release Rate
HSB	Hot Standby
HSS	High Safety Significant
HTRS	Heaters
HVAC	Heating, Ventilation, and Air Conditioning
HX	Heat Exchanger
IA	Instrument Air
IEPRA	Internal Events Probabilistic Risk Assessment
ILE	Pressurizer Pressure and Level Control
IN	NRC Information Notice
INPO	Institute of Nuclear Power Operations
IPEEE	Individual Plant Examination for External Events
ISLOCA	Interfacing System Loss of Coolant Accident
KC	Component Cooling Water
KF	Spent Fuel Pool Cooling
KSF	Key Safety Function
LAR	License Amendment Request
LC	Load Center
LERF	Large Early Release Frequency
LLI	Low Level Intake
LOCA	Loss of Coolant Accident
LOOP	Loss of Offsite Power

LSS	Low Safety Significant
M/A	Manual/Auto
MAAP	Modular Accident Analysis Program
MCA	Multi-Compartment Analysis
MCB	Main Control Board
MCC	Motor Control Center
MCR	Main Control Room
MCUB	Min Cut Upper Bound
MD	Motor Driven
MDCA	Motor Driven Auxiliary Feedwater
MDCAP	Motor Driven Auxiliary Feedwater Pump
MFW	Main Feedwater
MGL	Multiple Greek Layer
MHIF	Multiple High Impedance Fault.
MI	Mineral Insulated
MNS	McGuire Nuclear Station Units 1 and 2
MOV	Motor Operated Valve
MSIV	Main Steam Isolation Valve
MSO	Multiple Spurious Operation
N/A	Not Applicable
NC	Reactor Coolant
NCP	Reactor Coolant Pump
ND	Residual Heat Removal
NEDL	Nuclear Electronic Document Libraries
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association

NFPA 805	National Fire Protection Association Standard 805
NI	Safety Injection
NIST	National Institute of Standards and Technology
NPO	Non-Power Operational
NPP	Nuclear Power Plant
NRC	Nuclear Regulatory Commission
NS	Containment Spray
NSCA	Nuclear Safety Capability Assessment
NSEL	Nuclear Safety Equipment List
NSP	Non-Suppression Probability
NSPC	Nuclear Safety Performance Criteria
NSW	Nuclear Service Water
NUREG	Document Prepared by the NRC Staff
NUREG/CR	Document Prepared by NRC Contractors
NV	Chemical and Volume Control
OCA	Owner Controlled Area
OMA	Operator Manual Action
ONS	Oconee Nuclear Station
OS&Y	Outside, Screw, and Yoke
PAT	Plant Access Training
PAU	Physical Analysis Unit
PCS	Primary Control Station
PIP	Problem Investigation Program (Corrective Action Program)
PM	Preventive Maintenance
PORV	Power Operated Relief Valve
POS	Plant Operational State

PP	Plant Partitioning
PPE	Personal Protective Equipment
PRA	Probabilistic Risk Assessment
PRM	Plant Response Model
PRT	Pressurizer Relief Tank
PVC	Polyvinyl Chloride
PWR	Pressurized Water Reactor
PWROG	Pressurized Water Reactor's Owners Group
PZR	Pressurizer
QA	Quality Assurance
RA	Recovery Action
RAW	Risk Achievement Worth
RC	Condenser Cooling Water
RCA	Radiologically Controlled Area
RF	Fire Protection System
RG	Regulatory Guide
RHR	Residual Heat Removal
RI-PB	Risk-Informed, Performance-Based
RIS	Regulatory Issues Summary
RN	Nuclear Service Water
RP	Radiation Protection
RPS	Reactor Protection System
RS	Screen Backwash
RV	Containment Ventilation Cooling Water System
SA	Main Steam to Auxiliary Equipment
SBO	Station Blackout

SBMUP	Standby Make Up Pump
SDSP	250/125 VDC Distribution Center inside SSF Facility
SFP	Spent Fuel Pool
SFPE	Society of Fire Protection Engineers
S/G or SG	Steam Generator
SGTR	Steam Generator Tube Rupture
SLC	Selected Licensee Commitments
SM	Main Steam
SMP	Standby Makeup Pump
SNSWP	Standby Nuclear Service Water Pond
SOG	Standard Operating Guideline
Sp	Spurious Interlock
SP	Special Publication
SPOC	Single Point of Contact
SR	Supporting Requirement
SRV	Safety Relief Valve
Ss	Safety Injection Signal
SSA	Safe Shutdown Analysis
SSC	Structure, System, or Component
SSD	Safe Shutdown
SSE	Safe Shutdown Earthquake
SSEL	Safe Shutdown Equipment List
SSF	Standby Shutdown Facility
SSHR	Secondary Side Heat Removal
SSLD	Safe Shutdown Logic Diagram
SSS	Standby Shutdown System

SV	Main Steam Vent to Atmosphere
SWGR	Switchgear
T/C	Thermocouple
T-H	Thermohydraulic
TD	Turbine Driven
TDCA	Turbine Driven Auxiliary Feedwater
TDCAP	Turbine Driven Auxiliary Feedwater Pump
TDP	Turbine Driven Pump
TR	Technical Report
TS	Technical Specifications
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
V&V	Verification and Validation
VC	Control Room Area Ventilation
VCT	Volume Control Tank
VDC	Volts Direct Current
VFDR	Variance From Deterministic Requirements
WCC	Work Control Center
WL	Liquid Waste Recycle System
WZ	Ground Water Drainage
XLPE	Cross-Linked Polyethylene
YC	Chilled Water
yr	Year
YRD	Yard
ZOI	Zone of Influence

1.0 INTRODUCTION

The Nuclear Regulatory Commission (NRC) has promulgated an alternative rule for fire protection requirements at nuclear power plants, 10 CFR 50.48(c), National Fire Protection Association Standard 805 (NFPA 805). Duke Energy Carolinas, LLC (Duke Energy) is implementing the Nuclear Energy Institute (NEI) methodology NEI 04-02, "Guidance for Implementing a Risk-informed, Performance-based Fire Protection Program Under 10 CFR 50.48(c)" to transition McGuire Nuclear Station Units 1 and 2 (MNS) from its current fire protection licensing basis to the new requirements as outlined in NFPA 805. This report describes the transition methodology utilized and documents how MNS complies with the new requirements.

1.1 Background

1.1.1 NFPA 805 – Requirements and Guidance

On July 16, 2004 the NRC amended 10 CFR 50.48, Fire Protection, to add a new subsection, 10 CFR 50.48(c), which establishes new Risk-Informed, Performance-Based (RI-PB) fire protection requirements. 10 CFR 50.48(c) incorporates by reference, with exceptions, the NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants – 2001 Edition, as a voluntary alternative to 10 CFR 50.48 Section (b), Appendix R, and Section (f), Decommissioning.

As stated in 10 CFR 50.48(c)(3)(i), any licensee's adoption of a RI-PB program that complies with the rule is voluntary. This rule may be adopted as an acceptable alternative method for complying with either 10 CFR 50.48(b), for plants licensed to operate before January 1, 1979, or the fire protection license conditions for plants licensed to operate after January 1, 1979, or 10 CFR 50.48(f), plants shutdown in accordance with 10 CFR 50.82(a)(1).

NEI developed NEI 04-02 to assist licensees in adopting NFPA 805 and making the transition from their current fire protection licensing basis to one based on NFPA 805. The NRC issued Regulatory Guide (RG) 1.205, Risk-Informed, Performance-Based Fire Protection for Existing Light Water Nuclear Power Plants, which endorses NEI 04-02, with exceptions, in December 2009.[1]

A depiction of the primary document relationships is shown in Figure 1-1:

[1] Where referred to in this document NEI 04-02 is Revision 2 and RG 1.205 is Revision 1.

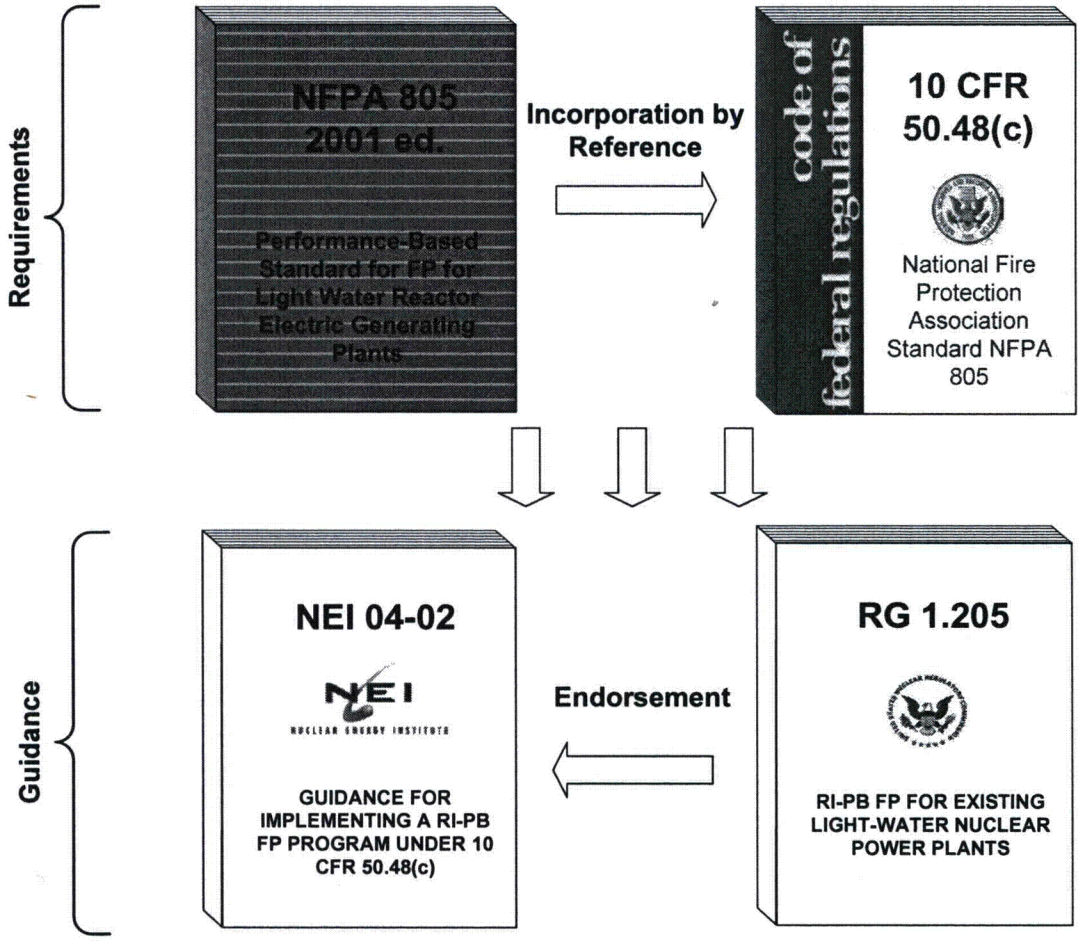

Figure 1-1 NFPA 805 Transition – Implementation Requirements/Guidance

1.1.2 Transition to 10 CFR 50.48(c)

1.1.2.1 Start of Transition

In 2005, Duke Energy made the decision to transition the Fleets' fire protection licensing basis to the RI-PB alternative in 10 CFR 50.48(c). By letter dated February 28, 2005 (ML050670305), Duke Energy submitted a letter of intent to the NRC that stated Oconee Nuclear Station (ONS) would transition as a Pilot followed by MNS and Catawba Nuclear Station (CNS) to adopt NFPA 805 in accordance with 10 CFR 50.48(c).

By letter dated June 8, 2005 (ML051080005), the NRC stated that it was premature to grant enforcement discretion for MNS, but that MNS should learn from the insights of ONS and provide a letter at a later date to state when transition would actually begin. The NRC indicated that Enforcement Discretion would be provided at that time.

By letter dated April 18, 2006 (ML061150375), Duke Energy informed the NRC that MNS was starting transition. Due to evolving expectations for non-Pilot plant Fire Probabilistic Risk Assessment, MNS requested a three year enforcement discretion period.

By letter dated September 26, 2006 (ML062700009), the NRC stated that a revision to its enforcement policy extending the NFPA 805 transition discretion period from 24 to 36 months had been published in the *Federal Register* (71 FR 19905) on April 18, 2006. Therefore, the extended discretion period for MNS was granted.

By letter dated March 13, 2008, Duke Energy informed the NRC that Duke Energy plans to utilize the full three-year transition discretion period as specified in the NRC letter dated September 26, 2006. As such, Duke Energy is revising its schedule for the License Amendment Request (LAR) submittal to April 18, 2009.

By letter dated January 16, 2009 (ML090350062), Duke Energy requested that the period of fire protection enforcement discretion for MNS be extended until six months after the NRC's approval of the second pilot plant License Amendment Request (LAR) but no earlier than May 31, 2010. Per the new fire protection enforcement policy dated August 19, 2008, enforcement discretion may be extended for a period of six months beyond the date of the safety evaluation approving the second pilot plant license amendment request to transition to NFPA 805.

By letter dated June 3, 2009 (ML091240640), the NRC concluded that: (a) the licensee's request for the extension of enforcement discretion is limited to six months past the NRC approval date of the second pilot LAR in accordance with the new interim fire protection enforcement policy and (b) the licensee has demonstrated enough substantial progress towards transitioning to NFPA 805 to grant them the additional enforcement discretion. Accordingly, the enforcement discretion period for McGuire 1 and 2 was extended until six months after the date of the safety evaluation approving the second pilot plant LAR.

By letter dated June 23, 2011 (ML11188A175), Duke Energy, (1) committed to submit a LAR by September 30, 2013, to transition to NFPA 805 in accordance with 10 CFR 50.48(c), and (2) requested that enforcement discretion for fire protection issues be extended to correspond with the LAR submittal commitment date.

By letter dated July 28, 2011 (ML11201A193), the NRC accepted the submittal and found it consistent with SRM-SECY-11-0061 dated June 10, 2011 (ML111610616). Therefore, the NRC granted the request to extend enforcement discretion in accordance with the Interim Enforcement Policy concerning Enforcement Discretion for Certain Fire Protection Issues as published in the Federal Register (76 FR 40777) on July 12, 2011.

1.1.2.2 Transition Process

The transition to NFPA 805 includes the following high level activities:

- A new Nuclear Safety Capability Assessment (continuation of the safe shutdown (SSD) activities started in 2000 for 10 CFR 50, Appendix R).
- A Fire Probabilistic Risk Assessment (PRA) using NUREG/CR-6850, "EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities", as guidance and a revision to the Internal Events PRAs to support the Fire PRAs.
- Completion of activities required to transition the pre-transition Licensing Basis to 10 CFR 50.48(c) as specified in NEI 04-02 and RG 1.205.

1.2 Purpose

The purpose of the Transition Report is as follows:

1) Describe the process implemented to transition the current fire protection program to comply with the additional requirements of 10 CFR 50.48(c).
2) Summarize the results of the transition process.
3) Explain the bases for conclusions that the fire protection program complies with 10 CFR 50.48(c) requirements.
4) Describe the new fire protection licensing basis.
5) Describe the configuration management processes used to manage post-transition changes to the station and the fire protection program, and resulting impact on the licensing basis.

2.0 OVERVIEW OF EXISTING FIRE PROTECTION PROGRAM

2.1 Current Fire Protection Licensing Basis

MNS was licensed to operate on June 12, 1981 for Unit 1 and March 3, 1983 for Unit 2. As a result, the MNS fire protection program is based on compliance with 10 CFR 50.48(a), and the following License Condition:

Duke Energy Carolinas, LLC, McGuire Nuclear Station, Renewed Facility Operating License Conditions 2.C.(4) for Unit 1 and Unit 2 states:

> (4) Fire Protection Program
>
> Duke Energy Carolinas, LLC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report for the facility and as approved in the SER dated March 1978 and Supplements 2, 5, and 6 dated March 1979, April 1981, and February 1983, respectively, and the safety evaluation dated May 15, 1989, subject to the following provisions:
>
> The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

2.2 NRC Acceptance of the Fire Protection Licensing Basis

During construction of MNS, in response to the NRC's request, Duke Energy performed a fire hazards analysis which analyzed the MNS fire protection program against the guidance of Appendix A to Branch Technical Position (BTP) Auxiliary and Power Conversion Systems Branch (APCSB) 9.5-1. The results of the analysis, in addition to proposed modifications and additions to the fire protection system, were communicated to the NRC by letter dated September 1, 1977, and served as the basis for the Appendix A to BTP APCSB 9.5-1 safety evaluations, dated March 1978, and supplemented on March 1979, April 1981, and February 1983.

In the initial safety evaluation dated March 1978, the NRC acknowledged the fire hazard analysis had been submitted and was being reviewed.

In Supplement 2 of the safety evaluation dated March 1979, MNS modifications to improve fire resistance capability were provided. This included additional fire protection features and an independent safe shutdown system. The NRC concluded that the Fire Protection Program for MNS with the improvements already made and those being made is adequate for the present and, with the scheduled safe shutdown system, will meet the guidelines contained in Appendix A to BTP APSCB 9.5-1 and meets General Design Criterion 3 and is, therefore, acceptable.

In Supplement 5 to the safety evaluation dated April 1981, the NRC concluded that the MNS fire protection program meets all the requirements of Appendix R to 10 CFR 50 when committed modifications have been completed, and meets the requirements of General Design Criterion 3. Modifications were required to support the following issues: Section III.G, Fire Protection of Safe Shutdown Capability; Section III.J, Emergency

Lighting; and Section III.O, Oil Collection System for Reactor Coolant Pumps. This safety evaluation was conditionally granted for full power operation.

In Supplement 6 to the safety evaluation dated February 1983, the NRC reviewed the standby shutdown system (SSS) for Units 1 and 2 in accordance with the criteria for alternate shutdown capability contained in 10 CFR 50, Appendix R. On the basis of its review, the staff concluded that the performance goals for accomplishing safe shutdown in the event of a fire-- reactivity control, inventory control, decay heat removal, pressure control, and support functions-- are met by the system and are acceptable, except for certain process control instrumentation. The staff required that the SSS include source-range neutron flux and wide-range cold-leg reactor coolant system temperature instrumentation and conditioned the Unit 2 operating license accordingly. The staff concluded that the McGuire Nuclear Station, including the SSS, meets the requirements of 10 CFR 50, Appendix R, Paragraphs III.G and III.L and, therefore, considers this matter resolved.

In a safety evaluation dated April 16, 1984 (ML#013170467), the NRC concluded that the MNS deviation from the Standby Shutdown Facility (SSF) Emergency Lighting Requirements is justified and that this deviation as reflected in the proposed amended operating license condition is satisfactory and acceptable. Approval for the deviation was requested in letters to the NRC dated November 18, 1983 and February 20, 1984.

In a safety evaluation dated May 15, 1989 (ML#091310136), the NRC concluded the level of fire safety in the areas listed below is equivalent to that achieved by compliance with the technical requirements of Section III.G of Appendix R; therefore, the deviations identified in the following areas are acceptable:

1. Auxiliary Building, Elevations 716 and 733 Feet (Fire Areas (FAs) 2, 2A, 3, 3A, 4, and 14) to the extent that a complete 1-hour fire rated barrier between redundant safe shutdown system components is not provided because unprotected steel supports penetrate the barriers affected.
2. Reactor Buildings' Wall Penetrations to the extent that a complete 3-hour fire rated barrier between redundant safe shutdown system components is not provided because process piping, spare sleeve, Heating, Ventilation, and Air Conditioning (HVAC) duct, and personnel access portal penetrations have not been qualified by fire tests.
3. Auxiliary, Diesel Generator, and Reactor Buildings' Seismic Joints, Elevation 733 Feet to the extent that a qualified 3-hour fire rated seal is not provided.
4. The licensee's identified deviation relative to security modified fire doors does not require NRC approval. Rather, the requirement is satisfied by licensee reassessment of the security modified doors in accordance with the guidance of Generic Letter 86-10.

Approval for the above deviations from Appendix R was requested in a letter to the NRC dated August 3, 1984.

In a safety evaluation dated May 15, 1989 (ML#091310136), the NRC concluded that the omission of the trouble signals for the public address system and the tone generators and the omission of precedence for fire alarm signals are acceptable

deviations from NFPA-72D. Therefore, the use of the public address system for local fire alarms inside containment is acceptable. Approval for the deviation was requested in a letter lto the NRC dated, May 6, 1983.

In a safety evaluation dated January 13, 2003 (ML#030130060), the NRC concluded that Duke Energy's request for deviation from 10 CFR 50, Appendix R, III.G.2 and III.G.3 Requirements regarding the use of Meggitt Cable in lieu of Appendix R alternatives does not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire, and does not require prior approval under Paragraph 2.C.(4) of the Facility Operating License. Approval for the deviation was requested in letters to the NRC dated October 3, 2002 and November 21, 2002.

3.0 TRANSITION PROCESS

3.1 Background

Section 4.0 of NEI 04-02 describes the process for transitioning from compliance with the current fire protection licensing basis to the new requirements of 10 CFR 50.48(c). NEI 04-02 contains the following steps:

1) Licensee determination to transition the licensing basis and devote the necessary resources to it;
2) Submit a Letter of Intent to the NRC stating the licensee's intention to transition the licensing basis in accordance with a tentative schedule;
3) Conduct the transition process to determine the extent to which the current fire protection licensing basis supports compliance with the new requirements and the extent to which additional analyses, plant and program changes, and alternative methods and analytical approaches are needed;
4) Submit a LAR;
5) Complete transition activities that can be completed prior to the receipt of the License Amendment;
6) Receive a Safety Evaluation; and
7) Complete implementation of the new licensing basis, including completion of modifications identified in Attachment S.

3.2 NFPA 805 Process

Section 2.2 of NFPA 805 establishes the general process for demonstrating compliance with NFPA 805. This process is illustrated in Figure 3-1. It shows that except for the fundamental fire protection requirements, compliance can be achieved on a Fire Area basis either by deterministic or RI-PB methods. Consistent with the guidance in NEI 04-02, Duke Energy has implemented the NFPA 805 Section 2.2 process by first determining the extent to which its current fire protection program supports findings of deterministic compliance with the requirements in NFPA 805. RI-PB methods are being applied to the requirements for which deterministic compliance could not be shown.

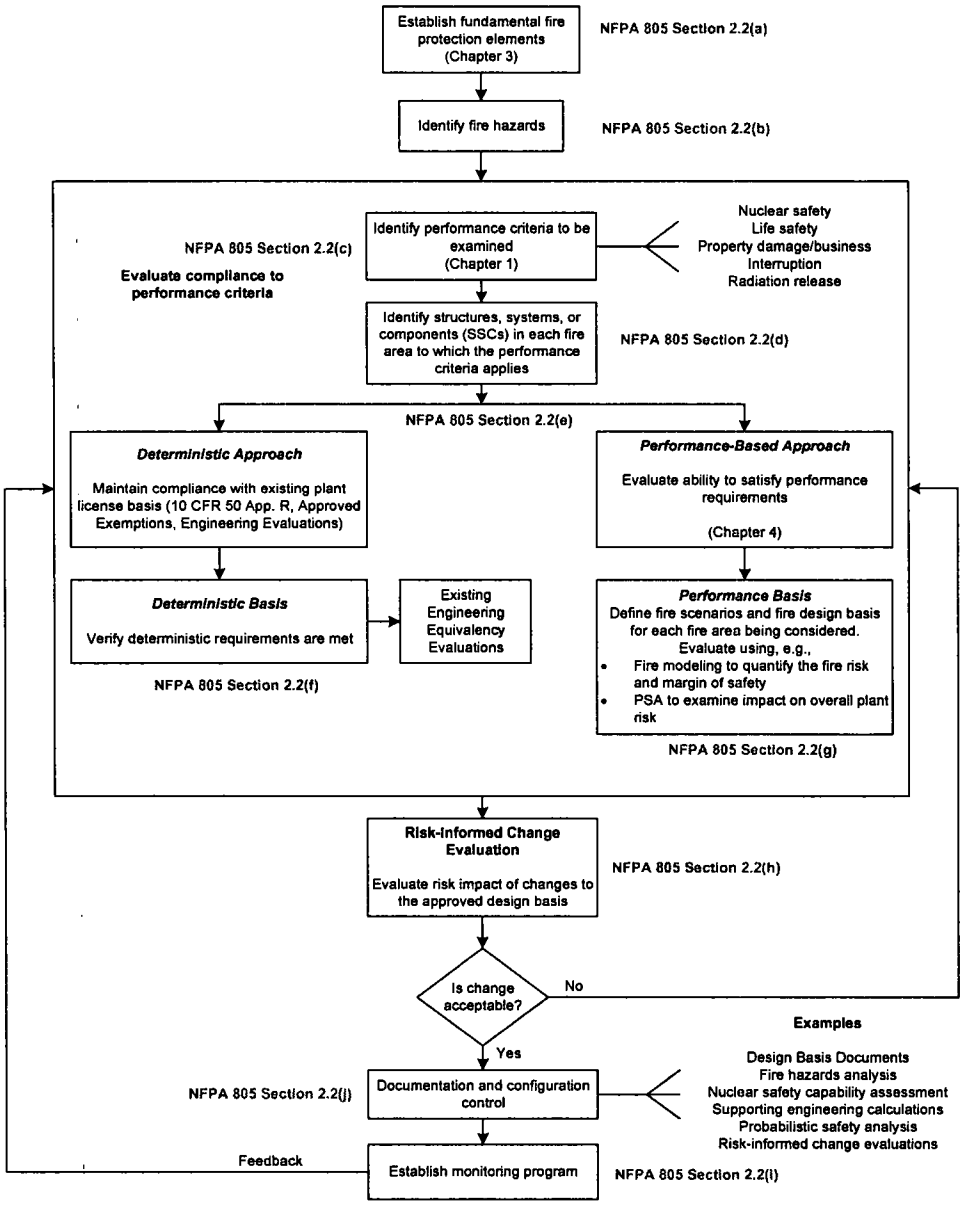

Figure 3-1 NFPA 805 Process [NEI 04-02 Figure 3-1 based on Figure 2-2 of NFPA 805][2]

3.3 NEI 04-02 – NFPA 805 Transition Process

NFPA 805 contains technical processes and requirements for a RI-PB fire protection program. NEI 04-02 was developed to provide guidance on the overall process (programmatic, technical, and licensing) for transitioning from a traditional fire protection licensing basis to a new RI-PB method based upon NFPA 805, as shown in Figure 3-2.

[2] Note: 10 CFR 50.48(c) does not incorporate by reference Life Safety and Plant Damage/ Interruption goals, objectives and criteria. See 10 CFR 50.48(c) for specific exceptions to the incorporation by reference of NFPA 805.

Section 4.0 of NEI 04-02 describes the detailed process for assessing a fire protection program for compliance with NFPA 805, as shown in Figure 3-2.

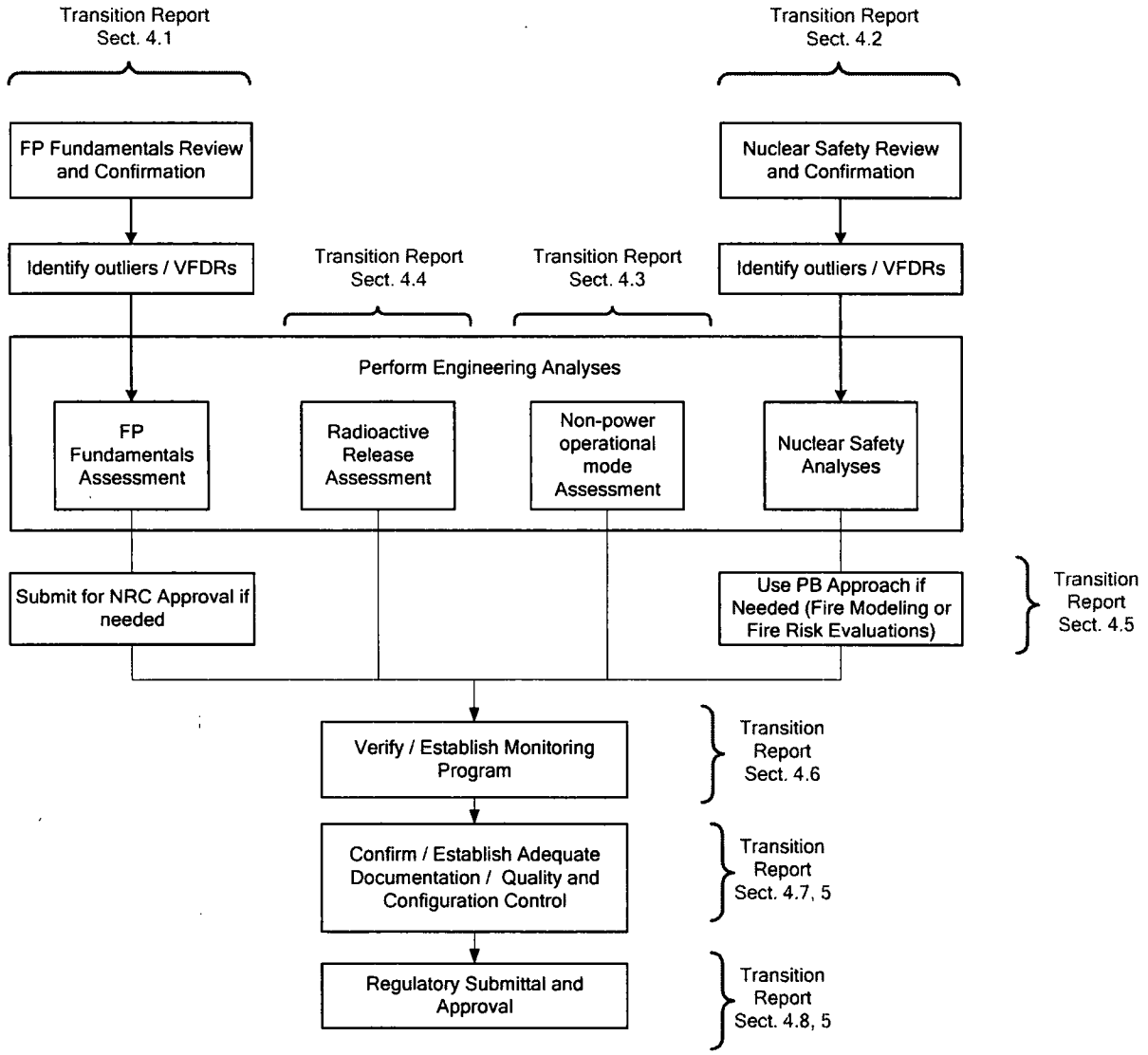

Figure 3-2 Transition Process (Simplified) [based on NEI 04-02 Figure 4-1]

3.4 NFPA 805 Frequently Asked Questions

The NRC has worked with NEI and two Pilot Plants (ONS and Harris Nuclear Plant) to define the licensing process for transitioning to a new licensing basis under 10 CFR 50.48(c) and NFPA 805. Both the NRC and the industry recognized the need for additional clarifications to the guidance provided in RG 1.205, NEI 04-02, and the requirements of NFPA 805. The NFPA 805 Frequently Asked Question (FAQ) process was jointly developed by NEI and NRC to facilitate timely clarifications of NRC positions. This process is described in a letter from the NRC dated July 12, 2006, to NEI (ML061660105) and in Regulatory Issues Summary (RIS) 2007-19, Process for

Communicating Clarifications of Staff Positions Provided in RG 1.205 Concerning Issues Identified during the Pilot Application of NFPA Standard 805, dated August 20, 2007 (ML071590227).

Under the FAQ Process, transition issues are submitted to the NEI NFPA 805 Task Force for review, and subsequently presented to the NRC during public FAQ meetings. Once the NEI NFPA 805 Task Force and NRC reach agreement, the NRC issues a memorandum to indicate that the FAQ is acceptable. NEI 04-02 will be revised to incorporate the approved FAQs. This is an on-going revision process that will continue through the transition of NFPA 805 plants. Final closure of the FAQs will occur when future revisions of RG 1.205, endorsing the related revisions of NEI 04-02, are approved by the NRC. It is expected that additional FAQs will be written and existing FAQs will be revised as plants continue NFPA 805 transition after the Pilot Plant Safety Evaluations.

Attachment H contains the list of approved FAQs not yet incorporated into the endorsed revision of NEI 04-02. These FAQs have been used to clarify the guidance in RG 1.205, NEI 04-02, and the requirements of NFPA 805 and in the preparation of this LAR. Note that MNS is transitioning using NEI 04-02 Revision 2 and the FAQs identified in Attachment H.

4.0 COMPLIANCE WITH NFPA 805 REQUIREMENTS

4.1 Fundamental Fire Protection Program and Design Elements

The Fundamental Fire Protection Program and Design Elements are established in Chapter 3 of NFPA 805. Section 4.3.1 of NEI 04-02 provides a systematic process for determining the extent to which the pre-transition licensing basis and plant configuration meets these criteria and for identifying the fire protection program changes that would be necessary for compliance with NFPA 805. NEI 04-02 Appendix B-1 provides guidance on documenting compliance with the program requirements of NFPA 805 Chapter 3.

4.1.1 Overview of Evaluation Process

The comparison of the MNS Fire Protection Program to the requirements of NFPA 805 Chapter 3 was performed and documented in a calculation entitled "NFPA 805 Transition B-1 Table/Report." The calculation used the guidance contained in NEI 04-02, Section 4.3.1 and Appendix B-1 (See Figure 4-1).

Each section and subsection of NFPA 805 Chapter 3 was reviewed against the current fire protection program. Upon completion of the activities associated with the review, the following compliance statement(s) was used:

- Comply - For those sections/subsections determined to meet the specific requirements of NFPA 805.
- Complies with Clarification - For those sections/subsections determined to meet the requirements of NFPA 805 with clarification.
- Complies with previous NRC approval - For those sections/subsections where the specific NFPA 805 Chapter 3 requirements are not met but previous NRC approval of the configuration exists.
- Complies via use of Existing Engineering Equivalency Evaluations (EEEEs) - For those sections/subsections determined to be equivalent to the NFPA 805 Chapter 3 requirements as documented by engineering analysis.
- Submit for NRC Approval - For those sections/subsections for which approval is sought in this LAR submittal in accordance with 10 CFR 50.48(c)(2)(vii). A summary of the bases of acceptability is provided (See Attachment L for details).
- N/A – NFPA 805 requirement does not apply to MNS.

In some cases multiple compliance statements have been assigned to a specific NFPA 805 Chapter 3 section/subsection. Where this is the case, each compliance/compliance basis statement clearly references the corresponding requirement of NFPA 805 Chapter 3.

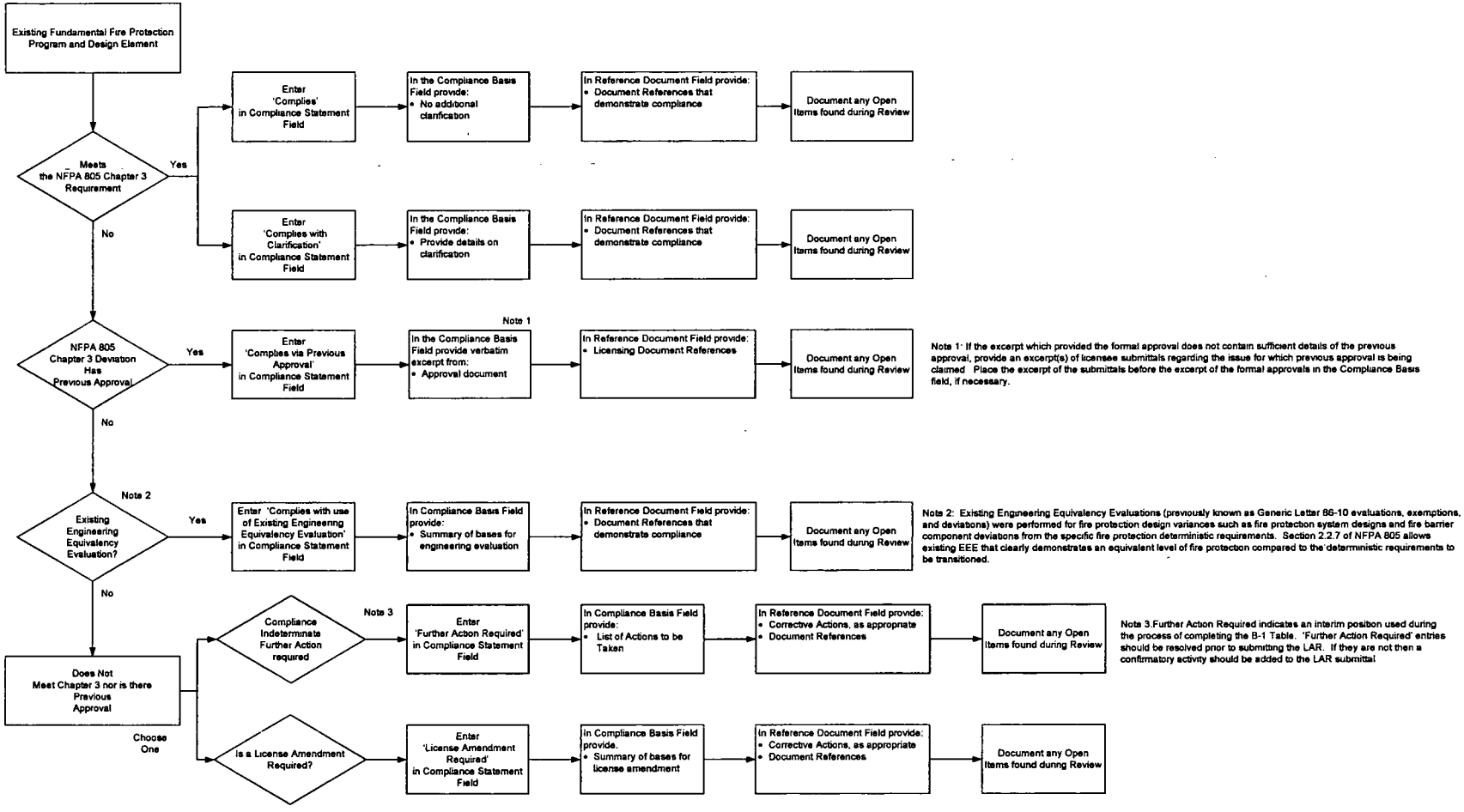

Figure 4-1 - Fundamental Fire Protection Program and Design Elements Transition Process [Based on NEI 04-02 Figure 4-2][3]

[3] Figure 4-1 depicts the process used during the transition and therefore contains elements (i.e., open items) that represent interim resolutions. Additional detail on the transition of EEEEs is included in Section 4.2.2.

4.1.2 Results of the Evaluation Process

4.1.2.1 NFPA 805 Chapter 3 Requirements Met or Previously Approved by the NRC

Attachment A contains the NEI 04-02 Table B-1, Transition of Fundamental Fire Protection Program and Design Elements. This table provides the compliance basis for the requirements in NFPA 805 Chapter 3. Except as identified in Section 4.1.2.3, Attachment A demonstrates that the fire protection program at MNS either:

- Complies directly with the requirements of NFPA 805 Chapter 3,
- Complies with clarification with the requirements of NFPA 805 Chapter 3,
- Complies via use of EEEEs which are valid and of appropriate quality,
- Complies with a previously NRC approved alternative to NFPA 805 Chapter 3 and therefore the specific requirement of NFPA 805 Chapter 3 is supplanted, or
- Not applicable to the requirements of NFPA 805 Chapter 3.

4.1.2.2 NFPA 805 Chapter 3 Requirements Requiring Clarification of Prior NRC Approval

NFPA 805 Section 3.1 states in part, "Previously approved alternatives from the fundamental protection program attributes of this chapter by the Authority Having Jurisdiction (AHJ) take precedence over the requirements contained herein." In some cases prior NRC approval of an NFPA 805 Chapter 3 program attribute may be unclear. Duke Energy requests that the NRC concur with their finding of prior approval for the following sections of NFPA 805 Chapter 3:

- None.

4.1.2.3 NFPA 805 Chapter 3 Requirements Not Met and Not Previously Approved by NRC

The following sections of NFPA 805 Chapter 3 are not specifically met nor do previous NRC approvals of alternatives exist:

- 3.2.3(1) – Approval is requested for the use of the Electric Power Research Institute (EPRI) Surveillance Frequency Optimization and Maintenance Guide.
- 3.3.5.1 – Approval is requested for existing wiring above suspended ceilings.
- 3.3.5.2 – Approval is requested for embedded/buried Polyvinyl Chloride (PVC) conduit.
- 3.3.12(1) – Approval is requested for potential oil misting from the reactor coolant pumps/motors.
- 3.5.3 – Approval is requested for the ability to remotely stop Fire Pumps A and B.
- 3.5.16 – Approval is requested for the use of the fire protection water system for specific purposes other than fire protection.

The specific deviation and a discussion of how the alternative satisfies 10 CFR 50.48(c)(2)(vii) requirements are provided in Attachment L. Duke Energy requests NRC approval of these performance-based methods.

4.1.3 Definition of Power Block and Plant

Where used in NFPA 805 Chapter 3 the terms "Power Block" and "Plant" refer to structures that have equipment required for nuclear plant operations, such as Containment, Auxiliary Building, Service Building, Control Building, Fuel Building, Radioactive Waste, Water Treatment, Turbine Building, and intake structures or structures that are identified in the facility's pre-transition licensing basis.

All structures within the MNS Owner Controlled Area were reviewed to determine the potential impact of fire on the nuclear safety criteria described in Section 1.5 of NFPA 805. This was accomplished by identifying the structures that contain equipment that could affect any of the following:

- Plant operation for power operation
- Equipment important to safety
- Ability to maintain nuclear safety performance criteria in the event of a fire

These structures are listed in Attachment I and define the MNS "Power Block" and "Plant".

MNS has determined that the water treatment facility and switchyard are not included in the power block definition. The water treatment facility is not required to meet the nuclear safety performance criteria, and the switchyard is not included as the NFPA 805 analysis boundary begins at the main and auxiliary transformers.

Structures required to meet the radioactive release criteria described in Section 1.5 of NFPA 805, but not required to meet the nuclear safety criteria are not defined in Attachment I. Separate screening of structures was performed for the radioactive release review as discussed in Section 4.4 and Attachment E.

4.2 Nuclear Safety Performance Criteria

The Nuclear Safety Performance Criteria are established in Section 1.5 of NFPA 805. Chapter 4 of NFPA 805 provides the methodology to determine the fire protection systems and features required to achieve the performance criteria outlined in Section 1.5. Section 4.3.2 of NEI 04-02 provides a systematic process for determining the extent to which the pre-transition licensing basis meets these criteria and for identifying any necessary fire protection program changes. NEI 04-02, Appendix B-2 provides guidance on documenting the transition of Nuclear Safety Capability Assessment (NSCA) Methodology and the FA compliance strategies.

4.2.1 Nuclear Safety Capability Assessment Methodology

The NSCA Methodology review consists of four processes:

- Establishing compliance with NFPA 805 Section 2.4.2.
- Establishing the Safe and Stable Conditions for the Plant.
- Establishing Recovery Actions.
- Evaluating Multiple Spurious Operations (MSOs).

The methodology for demonstrating reasonable assurance that a fire during non-power operational (NPO) modes will not prevent the plant from achieving and maintaining the

fuel in a safe and stable condition is an additional requirement of 10 CFR 50.48(c) and is addressed in Section 4.3.

4.2.1.1 Compliance with NFPA 805 Section 2.4.2

Overview of Process

NFPA 805 Section 2.4.2 Nuclear Safety Capability Assessment states:

> *"The purpose of this section is to define the methodology for performing a nuclear safety capability assessment. The following steps shall be performed:*
> *(1) Selection of systems and equipment and their interrelationships necessary to achieve the nuclear safety performance criteria in Chapter 1*
> *(2) Selection of cables necessary to achieve the nuclear safety performance criteria in Chapter 1*
> *(3) Identification of the location of nuclear safety equipment and cables*
> *(4) Assessment of the ability to achieve the nuclear safety performance criteria given a fire in each fire area"*

The NSCA methodology review evaluated the existing MNS post-fire safe shutdown analysis (SSA) methodology against the guidance provided in NEI 00-01, Revision 1 (ML050310295) Chapter 3, "Deterministic Methodology," as discussed in Appendix B-2 of NEI 04-02. The methodology is depicted in Figure 4-2 and consisted of the following activities:

- Each specific section of NFPA 805 2.4.2 was correlated to the corresponding section of Chapter 3 of NEI 00-01 Revision 1. Based upon the content of the NEI 00-01 methodology statements, a determination was made of the applicability of the section to the station.
- The plant-specific methodology was compared to applicable sections of NEI 00-01 and one of the following alignment statements and its associated basis were assigned to the section:
  - Not Required
  - Not Applicable
  - Aligns
  - Aligns with intent
  - Does Not Align
  - Does Not Align but has Previous Approval

The comparison of the existing MNS post-fire SSA methodology to NEI 00-01 Chapter 3 (NEI 04-02 Table B-2) was performed and documented in a calculation entitled, "NFPA 805 Transition NEI 04-02 B-2 Table – Nuclear Safety Capability Assessment - Methodology Review."

In addition, a review of NEI 00-01, Revision 2, (ML091770265) Chapter 3, was conducted to identify the substantive changes from NEI 00-01, Revision 1 that are applicable to an NFPA 805 fire protection program. This review is also documented in a calculation entitled, "NFPA 805 Transition NEI 04-02 B-2 Table – Nuclear Safety Capability Assessment – Methodology Review."

Results from Evaluation Process

The method used to perform the MNS post-fire SSA with respect to selection of systems and equipment, selection of cables, and identification of the location of equipment and cables, either meets the NRC endorsed guidance from NEI 00-01, Revision 1, Chapter 3 (as supplemented by the gap analysis) directly or meets the intent of the endorsed guidance with adequate justification as documented in Attachment B.

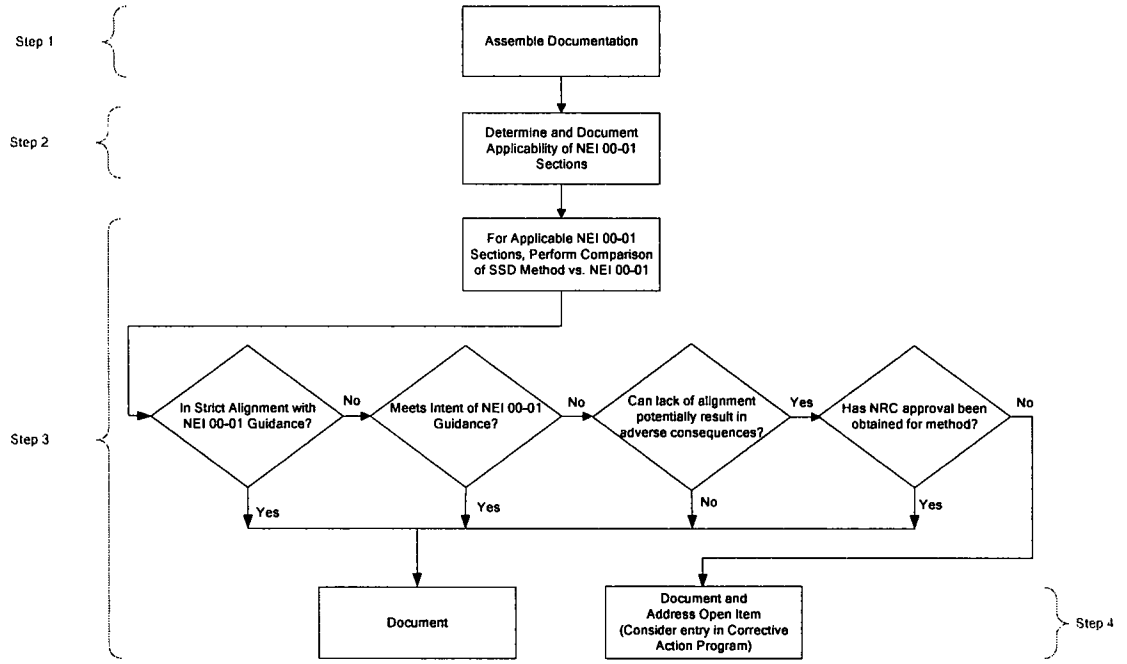

Figure 4-2 – Summary of Nuclear Safety Methodology Review Process (FAQ 07-0039)

Comparison to NEI 00-01 Revision 2

An additional review was performed of NEI 00-01, Revision 2, Chapter 3, for specific substantive changes in the guidance from NEI 00-01, Revision 1 that are applicable to an NFPA 805 transition. The results of this review are summarized below:

- Post fire manual operation of rising stem valves in the Fire Area of concern (NEI 00-01 Section 3.2.1.2):

  NEI 00-01, Revision 2 added additional guidance for evaluating for post-fire coefficient of friction for rising stem valves. Any post-fire manual operation of valves will be justified by an engineering evaluation as necessary in the "NFPA 805 Recovery Action Feasibility Review" calculation.

- Analysis of open circuits on a high voltage (e.g., 4.16 kV) ammeter current transformers (NEI 00-01 Section 3.5.2.1):

  NEI 00-01, Revision 2 added additional guidance on the open circuit of a high voltage ammeter current transformer (CT) circuit. MNS properly considered this additional guidance in their evaluations. See Attachment B for additional detail.

- Analysis of control power for switchgear with respect to breaker coordination (NEI 00-01 Section 3.5.2.4):

  NEI 00-01, Revision 2 added additional guidance to ensure breaker coordination. This guidance included examples for breakers that have internal breaker tripping devices that do not require control power and breakers that require control power for tripping. The latter requires an evaluation to ensure the availability of control power. MNS performed circuit analysis that evaluated for this condition.

4.2.1.2 Safe and Stable Conditions for the Plant

Overview of Process

The nuclear safety goals, objectives and performance criteria of NFPA 805 allow more flexibility than the previous deterministic programs based on 10 CFR 50 Appendix R and NUREG 0800, Section 9.5-1 (and NEI 00-01, Chapter 3) since NFPA 805 only requires the licensee to maintain the fuel in a safe and stable condition rather than achieve and maintain cold shutdown.

NFPA 805, Section 1.6.56, defines Safe and Stable Conditions as follows:

> *"For fuel in the reactor vessel, head on and tensioned, safe and stable conditions are defined as the ability to maintain Keff <0.99, with a reactor coolant temperature at or below the requirements for hot shutdown for a boiling water reactor and hot standby for a pressurized water reactor. For all other configurations, safe and stable conditions are defined as maintaining Keff <0.99 and fuel coolant temperature below boiling."*

The nuclear safety goal of NFPA 805 requires "*...reasonable assurance that a fire during any operational mode and plant configuration will not prevent the plant from achieving and maintaining the fuel in a safe and stable condition*" without a specific reference to a mission time or event coping duration.

For the plant to be in a safe and stable condition, it may not be necessary to perform a transition to cold shutdown as currently required under 10 CFR 50, Appendix R. Therefore, the unit may remain at the temperature defined by a hot standby plant operating state for the event.

Results

Based on the calculation entitled, "NFPA 805 Transition NEI 04-02 B-2 Table – Nuclear Safety Capability Assessment – Methodology Review", the NFPA 805 licensing basis for MNS to achieve proposed safe and stable conditions is as follows:

Demonstration of the Nuclear Safety Performance Criteria for safe and stable conditions was performed in two analyses:

- At-Power analysis, Modes 1-3 prior to manually initiating a cooldown. This analysis is discussed in Section 4.2.4.
- Non-Power analysis, which includes Modes 3 after initiating a manual cooldown, 4, 5, 6 and No-Mode. This analysis is discussed in Section 4.3.

The 'At Power' safe shutdown analysis postulates a single fire occurring at 100% power and provides the listing of damaged equipment that may be needed to restore a

success path to meet a particular nuclear safety performance goal. The 'At Power' safe and stable strategy includes entry into hot standby (HSB) (Mode 3) and stops prior to the point of manually initiating a cooldown.

The following long term actions can be instituted as needed:

- The site emergency organization can be established.
- More resources can be made available.
- Additional material can be available from both within and outside the corporation.
- Damage repairs can be completed as desired / needed resulting in additional success paths being made available.
- Offsite power is expected to be restored.

Safe and stable conditions at HSB may continue long term with the following activities:

Fuel Oil

- For SSF train - The SSF Diesel Generator (DG) fuel tank needs replenishing approximately every 72 hours. Fuel oil may also be obtained from offsite vendors.
- For A or B train - The safety related DGs need replenishing approximately every 5 days per design basis accident. Alternatively, the fire affected train's respective DG fuel can be pumped to the non-fire affected train DG providing approximately 10 days of fuel. Fuel oil may also be obtained from offsite sources.

Feedwater

- Approximately 18 hours of condensate grade water is available for A train, B train, or SSF success path.
- For SSF- additional feedwater can be taken from the RC embedded piping for approximately 3 days supply. This can be gravity replenished via Lake Norman or manual actions can replenish the water in this piping if required.
- For A or B train, although Lake Norman is expected to be available, the assured source is the Standby Nuclear Service Water Pond (SNSWP) via Nuclear Service Water.

Reactor Coolant (NC) Inventory

- For SSF train - The Spent Fuel Pool (SFP) will provide available inventory via the Standby Makeup Pump for at least 72 hours. SFP makeup can be provided from the Refueling Water Storage Tank (FWST) as well as several other sources to extend the available supply.
- For A or B train - Charging flow to the Reactor Coolant Pump seals will provide a steady state supply of inventory. The assured source is the FWST (approximately 383,146 gal.) and then realignment to containment sump.

Decay Heat

Long term safe and stable conditions can be maintained with natural circulation and Steam Generator steaming with assured adequate feedwater.

The transition for MNS to a new NFPA 805 fire protection licensing basis under 10 CFR 50.48(c) per NEI 04-02 requires that the licensee perform an engineering analysis to assess the impact of fires occurring in all operational modes, including non-power operations. For all non-power modes, the equipment required to demonstrate key safety functions are identified using a pinch point analysis. The 'Non-Power' safe and stable strategy includes cooldown initiating from hot standby portions of Mode 3 and Modes 4, 5, 6 and defueled, i.e. No-Mode, and places residual heat removal in service for long term cooling capability.

The balance of 'At Power' and 'Non-Power' strategies meets the definition of nuclear safety goal of NFPA 805, Section 1.3.1, in that "reasonable assurance that a fire during any operational mode and plant configuration will not prevent the plant from achieving and maintaining the fuel in a safe and stable condition."

4.2.1.3 Establishing Recovery Actions

Overview of Process

NEI 04-02 and RG 1.205 suggest that a licensee submit a summary of its approach for addressing the transition of Operator Manual Actions (OMAs) as recovery actions in the LAR (Regulatory Position 2.2.1 and NEI-04-02, Section 4.6). As a minimum, NEI 04-02 suggests that the assumptions, criteria, methodology, and overall results be included for the NRC to determine the acceptability of the licensee's methodology.

The discussion below provides the methodology used to transition pre-transition OMAs and to determine the population of post-transition recovery actions. This process is based on FAQ 07-0030 (ML110070485) and consists of the following steps:

- Step 1: Clearly define the primary control station(s) and determine which pre-transition OMAs are taken at primary control station(s) (Activities that occur in the Main Control Room are not considered pre-transition OMAs). Activities that take place at primary control station(s) or in the Main Control Room are not recovery actions, by definition.
- Step 2: Determine the population of recovery actions that are required to resolve variances from deterministic requirements (VFDRs) (to meet the risk acceptance criteria or maintain a sufficient level of defense-in-depth).
- Step 3: Evaluate the additional risk presented by the use of recovery actions required to demonstrate the availability of a success path.
- Step 4: Evaluate the feasibility of the recovery actions.
- Step 5: Evaluate the reliability of the recovery actions.

Results

The review results are documented in the following calculations entitled, "NFPA 805 Transition – NEI 04-02 B-3 Table – Fire Area Transition" , "NFPA 805 Transition Risk-Informed, Performance Based Fire Risk Evaluation", and "NFPA 805 Transition

Recovery Action Feasibility Review." Refer to Attachment G for the detailed evaluation process and summary of the results from the process.

4.2.1.4 Evaluation of Multiple Spurious Operations

Overview of Process

NEI 04-02 suggests that a licensee submit a summary of its approach for addressing potential fire-induced MSOs for NRC review and approval. As a minimum, NEI 04-02 suggests that the summary contain sufficient information relevant to methods, tools, and acceptance criteria used to enable the NRC to determine the acceptability of the licensee's methodology. The methodology utilized to address MSOs for MNS is summarized below.

As part of the NFPA 805 transition project, a review and evaluation of MNS susceptibility to fire-induced MSOs was performed. The process was conducted in accordance with NEI 04-02 and RG 1.205, as supplemented by FAQ 07-0038 Revision 1 (ML082100034). The Draft Pressurized Water Reactor Owners Group (PWROG) MSO listing (file "PWR Generic MSO List, Working Draft Rev. E) was utilized.

The approach outlined in Figure 4-3 (based on Figure XX from FAQ 07-0038) is one acceptable method to address fire-induced MSOs. This method used insights from the Fire PRA developed in support of transition to NFPA 805 and consists of the following:

- Identifying potential MSOs of concern.
- Conducting an expert panel to assess plant specific vulnerabilities (e.g., per NEI 00-01, Rev. 1 Section F.4.2).
- Updating the Fire PRA model and NSCA to include the MSOs of concern.
- Evaluating for NFPA 805 Compliance.
- Documenting Results.

This process is intended to support the transition to a new licensing basis. Post-transition changes would use the RI-PB change process. The post-transition change process for the assessment of a specific MSO would be a simplified version of this process, and may not need the level of detail shown in the following section (e.g., An expert panel may not be necessary to identify and assess a new potential MSO. Identification of new potential MSOs may be part of the plant change review process and/or inspection process).

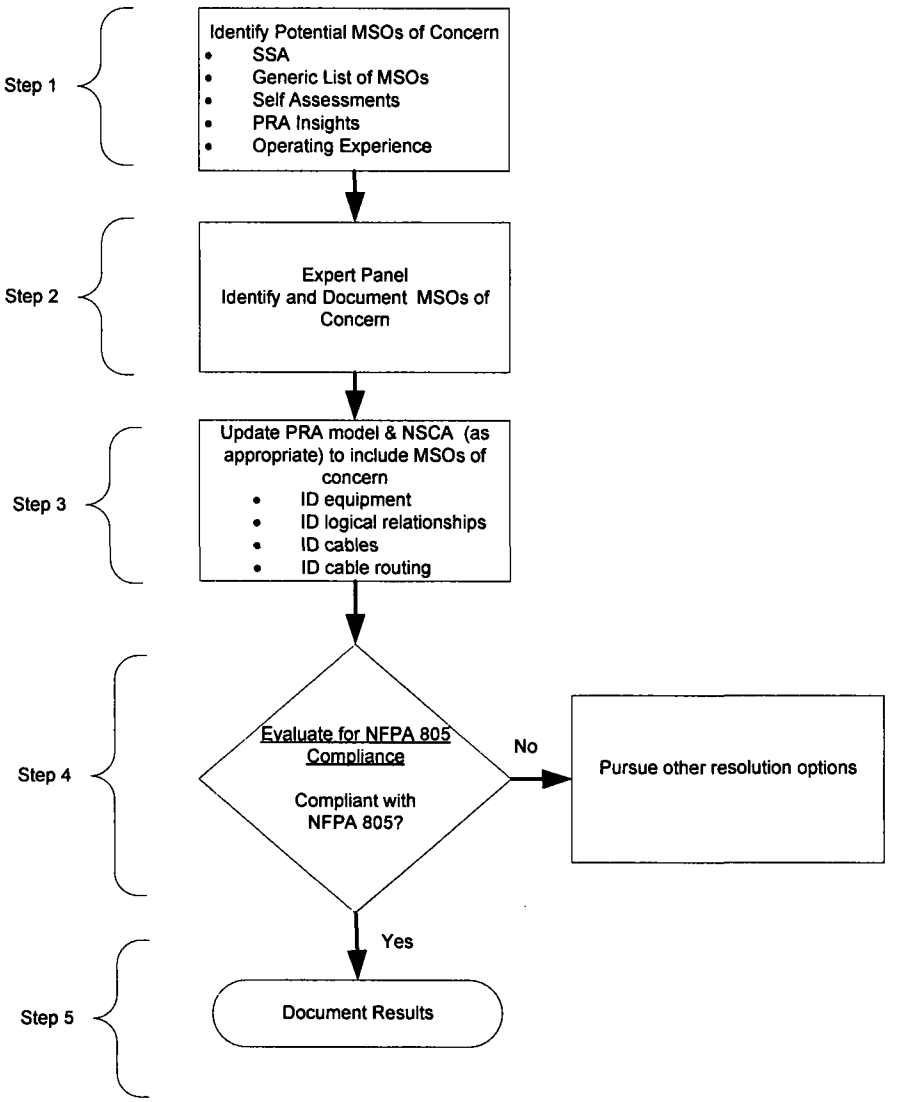

Figure 4-3 – Multiple Spurious Operations – Transition Resolution Process (Based on FAQ 07-0038)

Results

Refer to Attachment F for the process used and the results.

4.2.2 Existing Engineering Equivalency Evaluation Transition

Overview of Evaluation Process

The EEEEs that support compliance with NFPA 805 Chapter 3 or Chapter 4 (both those that existed prior to the transition and those that were created during the transition) were reviewed using the methodology contained in NEI 04-02. The methodology for performing the EEEE review included the following determinations:

- The EEEE is not based solely on quantitative risk evaluations,
- The EEEE is an appropriate use of an engineering equivalency evaluation,
- The EEEE is of appropriate quality,

- The standard license condition is met,
- The EEEE is technically adequate,
- The EEEE reflects the plant as-built condition, and
- The basis for acceptability of the EEEE remains valid.

In accordance with the guidance in RG 1.205, Regulatory Position 2.3.2 and NEI 04-02, as clarified by FAQ 07-0054, Demonstrating Compliance with Chapter 4 of NFPA 805, EEEEs that demonstrate that a fire protection system or feature is "adequate for the hazard" are summarized in the LAR as follows:

- If not requesting specific approval for "adequate for the hazard" EEEEs, then the EEEE was referenced where required and a brief description of the evaluated condition was provided.
- If requesting specific NRC approval for "adequate for the hazard" EEEEs, then the EEEE was referenced where required to demonstrate compliance and was included in Attachment L for NRC review and approval.

In all cases, the reliance on EEEEs to demonstrate compliance with NFPA 805 requirements was documented in the LAR.

Results

The review results for EEEEs are documented in a calculation entitled "NFPA 805 Transition Existing Engineering Equivalency Evaluations."

In accordance with the guidance provided in RG 1.205, Regulatory Position 2.3.2, NEI 04-02, as clarified by FAQ 07-0054, Demonstrating Compliance with Chapter 4 of NFPA 805, EEEEs used to demonstrate compliance with Chapters 3 and 4 of NFPA 805 are referenced in the Attachments A and C as appropriate.

None of the transitioning EEEEs require NRC approval.

4.2.3 Licensing Action Transition

Overview of Evaluation Process

The existing licensing actions (exemptions / deviations / safety evaluations) review was performed in accordance with NEI 04-02 and documented in a calculation entitled, "NFPA 805 Transition Action Licensing Action Review. The methodology for the licensing action review included the following:

- Determination of the bases for acceptability of the licensing action.
- Determination that these bases for acceptability are still valid and required for NFPA 805.

Results

Attachment K contains the detailed results of the Licensing Action Review.

The following licensing actions will be transitioned into the NFPA 805 fire protection program as previously approved (NFPA 805 Section 2.2.7). These licensing actions are considered compliant under 10 CFR 50.48(c).

- 01. 10 CFR 50 Appendix R deviation from III.G.2 and III.G.3 Requirements (Meggitt Cable) for McGuire Nuclear Station Unit 1 - Use of fire resistive electrical cable to provide the required separation of cables associated with redundant trains of systems necessary to achieve and maintain safe shutdown per Section III.G.2 and II.G.3 of Appendix R.
- 02. Auxiliary Building 10 CFR 50 Appendix R III.G.2.c Deviations - Auxiliary Building, Elevations 716 and 733 Feet (Fire Areas 2, 2A, 3, 3A, 4, and 14) to the extent that unprotected steel supports penetrate the 1-hour fire rated barrier between redundant safe shutdown system components.
- 03. Auxiliary Building Expansion Joint Deviation - Auxiliary, Diesel Generator, and Reactor Buildings' Seismic Joints, Elevation 733 Feet to the extent that compressed cork is located in the seismic expansion joints.
- 04. Cable Room Barrier Three Hour Deviation - Cable Room Barrier modified due to not meeting the fire endurance testing.
- 05. Cable Spreading Rooms Fog-Type Sprinkler System Deviation – The manually actuated "fog type" sprinkler systems installed in each cable spreading room do not meet all provisions of the applicable NFPA codes and the FPR.
- 08. Duct Shaft Wall 3-hour Fire Rating Deviation – The walls enclosing the duct shafts next to the cable spreading rooms are not of three hour fire rated construction.
- 09. Installation of Safe Shutdown Facility per 10 CFR 50 Appendix R III.G and III.L Requirements.
- 11. NFPA 20 Fire Pump Installation – The installed MNS fire pumps do not meet all of the provisions of NFPA 20.
- 12. Reactor Building 10 CFR 50 Appendix R III.G.2.a Deviations - Reactor Buildings' Wall Penetrations (process piping, spare sleeve, HVAC duct, and personnel access portal penetrations) have not been qualified by fire tests.
- 13. Reactor Buildings Fire Suppression System – A single remote manually operated control valve is provided for the containment hose stations and sprinklers.

The following licensing actions are no longer necessary and will not be transitioned into the NFPA 805 fire protection program:

- 06. Deviation Request for Containment Local Fire Alarms - The omission of the trouble signals for the public address system and the tone generators and the omission of precedence for fire alarm signals are acceptable deviations from NFPA-72D.

  MCC-1435.00-00-0028, NFPA 805 Transition B-1 Table/Report, states the fire detection systems were evaluated to the NFPA 72, 2007, and met the associated requirements. MNS complies with the requirements of NFPA 805 section 3.8.1.2. This licensing action will, therefore, not be transitioned.

- 07. Deviation Request from the SSF Emergency Lighting Requirements (III.J criteria) - Lack of 8-hour emergency lights in the Safe Shutdown Facility as required by Section III.J of Appendix R.

  This licensing action is no longer required since there is not an 8 hour emergency lighting requirement per NFPA 805. Portable lighting will be utilized as determined by recovery action feasibility.
- 10. NFPA 13 and NFPA 15 Water Flow Alarm Deviation.

  Lack of water flow alarms has been evaluated as acceptable in the code compliance evaluation; therefore, this licensing action is no longer required.

Since the deviations are either compliant with 10 CFR 50.48(c) or no longer necessary, as discussed in Attachment M, upon issuance of the new 10 CFR 50.48(c) license condition, the current MNS license condition will be superseded. It is MNS understanding that implicit in the superseding of the current license condition, all prior fire protection program Safety Evaluation Reports and commitments will be superseded in their entirety.

4.2.4 Fire Area Transition

Overview of Evaluation Process

The Fire Area Transition (NEI 04-02 Table B-3) was performed using the methodology contained in NEI 04-02 and FAQ 07-0054. The methodology for performing the Fire Area Transition, depicted in Figure 4-4, is outlined as follows:

Step 1 - Assembled documentation. Gathered industry and plant-specific Fire Area analyses and licensing basis documents.

Step 2 – Documented fulfillment of nuclear safety performance criteria.

- Assessed accomplishment of nuclear safety performance goals. Documented the method of accomplishment, in summary level form, for the Fire Area.
- Documented evaluation of effects of fire suppression activities. Documented the evaluation of the effects of fire suppression activities on the ability to achieve the nuclear safety performance criteria.
- Performed licensing action reviews. Performed a review of the licensing aspects of the selected Fire Area and document the results of the review. See Section 4.2.3.
- Performed existing engineering equivalency evaluation reviews. Performed a review of existing engineering equivalency evaluations (or created new evaluations) documenting the basis for acceptability. See Section 4.2.2.
- Pre-transition OMA reviews. Performed a review of pre-transition OMAs to determine those actions taking place outside of the main control room or outside of the primary control station(s). See Section 4.2.1.3.

Step 3 – VFDR Identification and characterization and resolution considerations. Identified variances from the deterministic requirements of NFPA 805, Section 4.2.3. Documented variances as either pre-transition OMA, separation issue or degraded fire

protection system or feature. Developed VFDR problem statements to support resolution.

Step 4 – Performance-Based evaluations (Fire Modeling or Fire Risk Evaluations) See Section 4.5.2 for additional information.

Step 5 – Final Disposition.

- Documented final disposition of the VFDRs in Attachment C (NEI 04-02 Table B-3).
- For recovery action compliance strategies, ensured the manual action feasibility analysis of the required recovery actions was completed. Note: if a recovery action cannot meet the feasibility requirements established per NEI 04-02, then alternate means of compliance was considered.
- Documented the post transition NFPA 805 Chapter 4 compliance basis.

Step 6 – Documented required fire protection systems and features. Reviewed the NFPA 805 Section 4.2.3 compliance strategies (including Fire Area licensing actions and engineering evaluations) and the NFPA 805 Section 4.2.4 compliance strategies (including simplifying deterministic assumptions) to determine the scope of fire protection systems and features 'required' by NFPA 805 Chapter 4. The 'required' fire protection systems and features are subject to the applicable requirements of NFPA 805 Chapter 3.

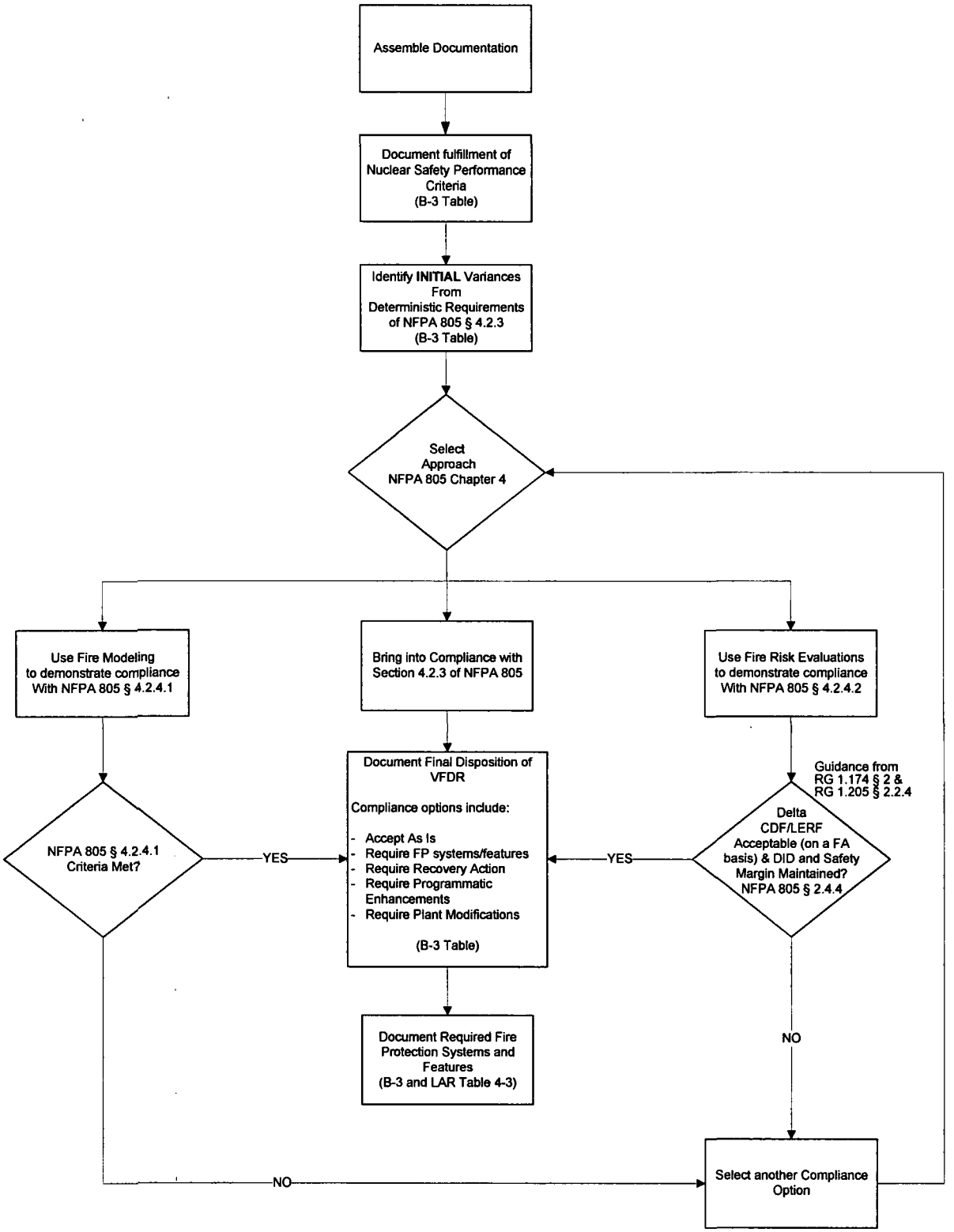

Figure 4-4 – Summary of Fire Area Review
[Based on FAQ 07-0054 Revision 1]

Results of the Evaluation Process

Table C-1 of Attachment C contains the results of the Fire Area Transition review (NEI 04-02 Table B-3). On a Fire Area basis, Table C-1 of Attachment C summarizes compliance with Chapter 4 of NFPA 805.

NEI 04-02 Table B-3 includes the following summary level information for each Fire Area:

- Compliance Basis – NFPA 805 post-transition regulatory bases are included.
- Performance Goal Summary – An overview of the method of accomplishment of each of the performance criteria in NFPA 805 Section 1.5 is provided.
- Reference Documents – Specific references to Nuclear Safety Capability Assessment Documents are provided.
- Fire Suppression Activities Effect on Nuclear Safety Performance Criteria – A summary of the method of accomplishment is provided.
- Licensing Actions – Specific references to deviations / safety evaluations that will remain part of the post-transition licensing basis. A brief description of the condition and the basis for acceptability of the licensing action is provided.
- EEEE – Specific references to EEEE that rely on determinations of "adequate for the hazard" that will remain part of the post-transition licensing basis. A brief description of the condition and the basis for acceptability is provided.
- VFDRs – Specific variances from the deterministic requirements of NFPA 805 Section 4.2.3. MNS VFDR's are only pre-transition OMAs or separation issues. Refer to Section 4.5.2 for a discussion of the performance-based approach.

4.3 Non-Power Operational Modes

4.3.1 Overview of Evaluation Process

MNS implemented the process outlined in NEI 04-02 and FAQ 07-0040, Clarification on Non-Power Operations. The goal (as depicted in Figures 4-5 and 4-6) is to ensure that contingency plans are established when the plant is in a Non-Power Operational (NPO) mode where the risk is intrinsically high. During low risk periods, normal risk management controls and fire prevention/protection processes and procedures will be utilized.

The process to demonstrate that the nuclear safety performance criteria are met during NPO modes involved the following steps:

- Reviewed the existing Outage Management Processes.
- Identified Equipment/Cables:
  - Reviewed plant systems to determine success paths that support each of the defense-in-depth Key Safety Functions (KSFs), and
  - Identified cables required for the selected components and determined their routing.
- Performed Fire Area Assessments (identify pinch points – plant locations where a single fire may damage all success paths of a KSF).

- Managed pinch-points associated with fire-induced vulnerabilities during the outage.

The process is depicted in Figures 4-5 and 4-6. The results are presented in Section 4.3.2.

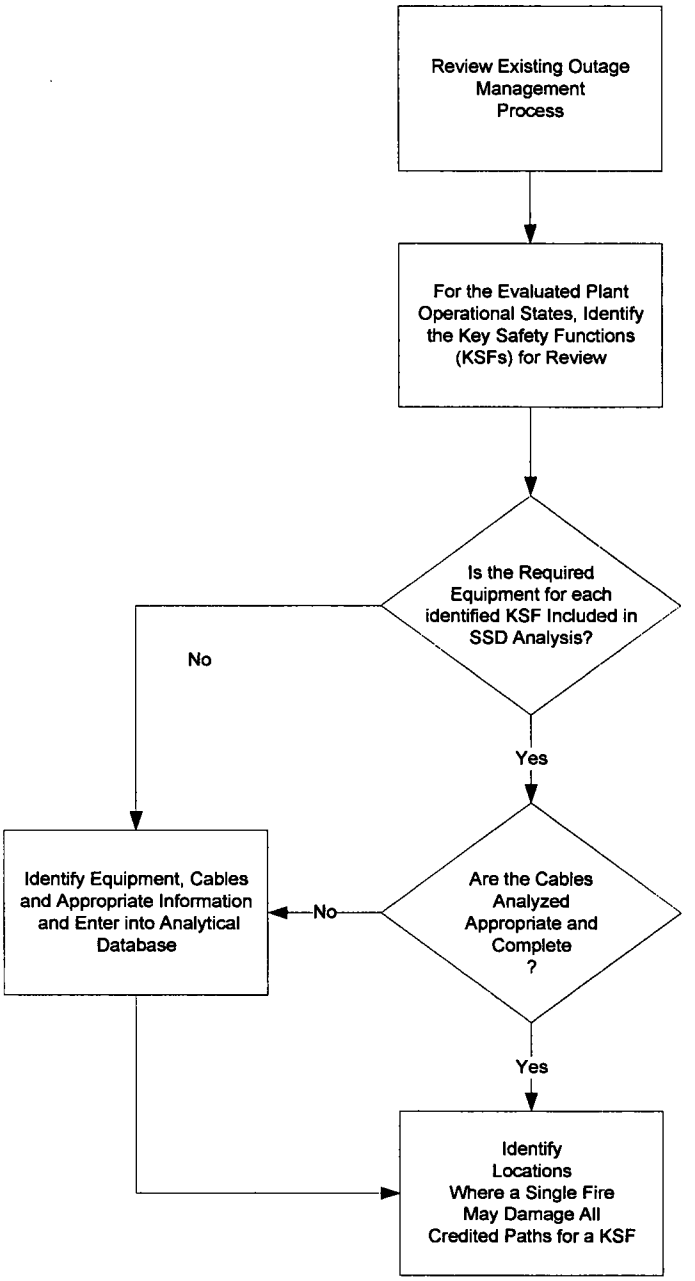

Figure 4-5 Review POSs, KSFs, Equipment, and Cables, and Identify Pinch Points

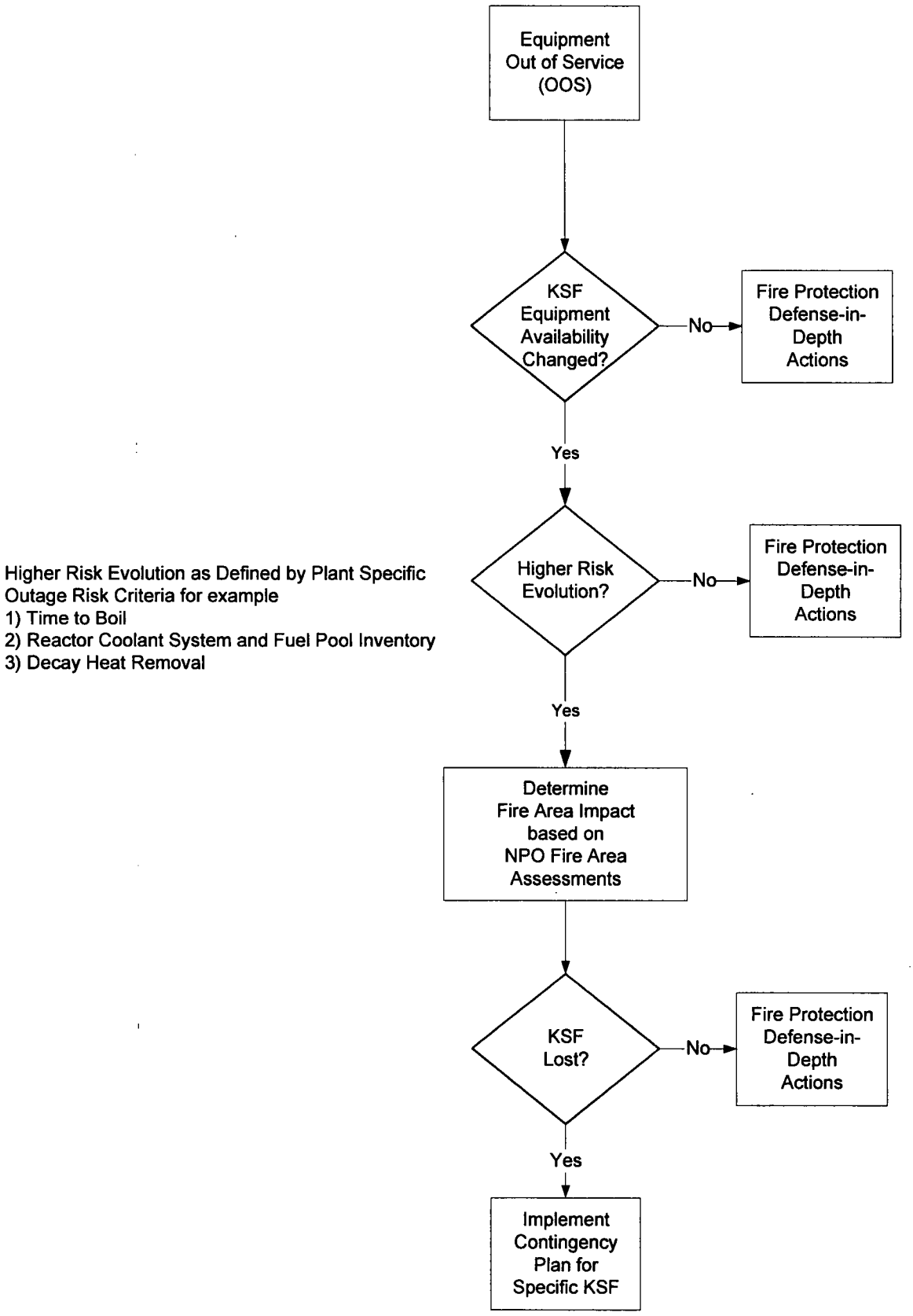

Figure 4-6 Manage Pinch Points

4.3.2 Results of the Evaluation Process

An assessment of the potential loss of a KSF was performed for each mode or Plant Operating State. Common vulnerabilities in KSF success paths potentially impacted by fires in a given Fire Area or from unit to unit were identified utilizing the other NPO reporting capabilities of DATATRAK. Fire Areas were then determined to be a "Pinch Point" based on the potential loss of a KSF for one or more operational modes or Plant Operating States. Based on the review of the total 48 Fire Areas:

- Twelve areas were found to have an adequate number of KSF success paths survive the entire contents loss of the Fire Area, such that all KSF's remain available. No recommendations for additional fire protection measures during Elevated Risk Conditions are made for these areas.
- Twenty-one Fire Areas could involve the loss of one or more KSF's on one unit due to the loss of all unit specific KSF success paths for a fire in that Fire Area. These KSF success paths can be preserved through the additional fire protection/fire prevention actions recommended to be established during Elevated Risk Conditions.
- Fifteen Fire Areas could involve the loss of one or more KSF's in both units due to crediting equipment common for both units such as power supplies or other support systems/components. With the exception of the Control Rooms, which are constantly manned, these areas have been recommended for verification of functionality of available fire detection and suppression systems to manage fire risk to an appropriate level during Elevated Risk Conditions.
- None could involve loss of all KSFs for both units.

Note that the 48 Fire Areas are consistent with the Fire Areas analyzed under the NSCA with the exception of Fire Area DIS which was not included because there are no NPO cables/equipment in that Fire Area.

This information was used to categorize the Fire Areas and develop recommended fire protection/fire prevention actions. The following recommendations from FAQ 07-0040, Non-Power Operations Clarifications, Revision 4 (ML082070249) were considered when making MNS specific recommendations:

- Prohibition or limitation of hot work in Fire Areas during periods of increased vulnerability.
- Verification of functional detection and /or suppression in the vulnerable areas.
- Plant configuration changes (e.g., removing power from equipment once it is placed in its desired position).
- Provision of additional fire patrols at periodic intervals or other appropriate compensatory measures (such as surveillance cameras) during increased vulnerability.
- Use of recovery actions to mitigate potential losses of key safety functions.
- Identification and monitoring in-situ ignition sources for "fire precursors" (e.g., equipment temperatures).
- Reschedule the work to a period with lower risk or higher defense in depth (DID).

Details of the NPO evaluation and results are contained in Attachment D. See Implementation Item 13 in Table S-3 of Attachment S.

4.4 Radioactive Release Performance Criteria

4.4.1 Overview of Evaluation Process

The review of the fire protection program against NFPA 805 requirements for fire suppression related radioactive release was performed using the methodology contained in a calculation entitled "NFPA 805 Transition – Radiological Release input to LAR Attachment E." The methodology consisted of the following:

The Nuclear Safety Performance Criteria (NSPC) already requires the prevention of fuel cladding damage. The use of NFPA 805 Section 4.2.3 explicitly meets the radioactive release objective by limiting the source term (no fuel damage). As such, radiological release due to fuel damage should not require a separate examination since no such damage is assumed to occur.

The radioactive release performance criteria (NFPA 805 Section 1.5.2) requires that radiation release to unrestricted areas due to direct affects of fire suppression activities shall be low as reasonably achievable and shall not exceed applicable 10 CFR 20 limits. This limits the radioactive release review to fire fighting activities and the control of combustion products (smoke and particulates) and the control of fire fighting agents (water). The potential for radioactive release due to fire fighting activities is addressed via evaluation of fire strategies and training materials.

Each Fire Area was screened to determine if a potential for Radioactive Release was possible. Areas outside of the radiologically controlled area (RCA) were viewed as having no risk and have been subsequently screened out. Compartments were then identified based on the presence of common smoke and runoff control systems. If a Fire Area was found to have a unique condition, although within the boundaries of a building that may be identified as a compartment, that Fire Area would be identified as an individual compartment during the analysis process.

The MNS fire strategies were reviewed to screen the potential to contain radioactive or contaminated materials. Information is provided in Attachment E for each compartment that is screened in (affects radioactive release) or screened out (cannot affect radioactive release). These fire strategies were evaluated to ensure that the locations that have the potential for radioactive release due to fire fighting activities are subject to specific steps for containment and monitoring of potentially contaminated smoke and fire suppression water. Available engineering or procedural controls for water release and smoke were then reviewed to determine how effectively the specific steps in the fire strategies provide guidelines for the containment and monitoring of potentially contaminated smoke and fire suppression water. The fire strategies assume the plant is at power operation in terms of identifying specific hazards; however the strategies employed do not rely on the operational status of the unit(s) and are therefore valid during outage periods as well.

The fire brigade training materials were reviewed to ensure they are consistent with the fire strategies in terms of containment and monitoring of potentially contaminated smoke and fire suppression water. Attachment E summarizes if the radioactive release

performance criteria are met for each fire strategy Fire Area. This review covers all plant operating modes since the fire strategies are not mode specific.

FAQ 09-0056 provides additional guidance on treatment of Radioactive Release. Within the guidance are two paths, a qualitative review and a quantitative review. MNS has chosen to perform a qualitative review.

The qualitative evaluation uses three levels of defense as the method of providing reasonable assurance that an uncontrolled radioactive release does not exceed 10 CFR 20 limits:

- Contain Effluent from the Fire and Fire Suppression Activities.
- Engage all Fire Brigade Responders.
- Radiation Protection Professional.

By using this approach, three levels of defense are provided to prevent radioactive release limits from being exceeded: Contain the source of the release by engineering or administrative controls; have response personnel engaged and acting on the potential failure of the containment method; and provide a Radiation Protection professional to support and monitor operations and maintain compliance.

4.4.2 Results of the Evaluation Process

MNS calculation entitled "NFPA 805 Transition – Radiological Release input to LAR Attachment E" contains a list of recommendations which will enhance the radioactive release performance criteria. See Implementation Item 1 in Table S-3 of Attachment S. Individual Fire Area results are documented in Attachment E. Note that the 40 Fire Areas identified in the radioactive release evaluation are consistent with the Fire Areas analyzed under the NSCA.

By using RCA engineered ventilation systems, providing training to responders, implementing additional guidance for the control of and response to fires involving radioactive material, and having a "caution" statement for the use of alternate ventilation methods, the philosophy to control airborne release is addressed within the fire strategies. Where engineering controls are not available administrative controls are implemented. The individual compartments reviewed and results are documented in Attachment E.

The unrestricted release of radioactive material through runoff is most likely to occur when water from an RCA escapes that boundary and enters the site storm drain system. Storm drains located in the yard do not have a monitoring system. Additional administrative controls, including a diagram of relevant storm drain locations will be added to the fire strategies.

No reference to runoff was identified in any of the fire strategies. A statement that the control of runoff is important for locations that are adjacent to the exterior of the RCA buildings will be added to the fire strategies.

Training of the fire brigade personnel is a line of defense in preventing the radioactive release during fire fighting activities. A review of the lesson plans and fire brigade standard operating procedures found no objectives that address fire fighting concerns

for controlling radioactive smoke or runoff. Limited statements to coordinate with health physics were identified in procedures but with no direct relationship to preventing radioactive release.

The radioactive release review determined the fire protection program will be compliant with the requirements of NFPA 805 and the guidance in NEI 04-02 and RG 1.205 upon completion of the implementation items identified in Attachment E.

4.5 Fire PRA and Performance-Based Approaches

RI-PB evaluations are an integral element of an NFPA 805 fire protection program. Key parts of RI-PB evaluations include:

- A Fire PRA (discussed in Section 4.5.1 and Attachments U, V, and W).
- NFPA 805 Performance-Based Approaches (discussed in Section 4.5.2).

4.5.1 Fire PRA Development and Assessment

In accordance with the guidance in RG 1.205, a Fire PRA model was developed for MNS consistent with the requirements of Part 4 "Requirements for Fires At Power PRA," of the American Society of Mechanical Engineers (ASME) and American Nuclear Society (ANS) combined PRA Standard, ASME/ANS RA-Sa-2009, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Application," (hereafter referred to as Fire PRA Standard). Duke Energy conducted a peer review by independent industry analysts in accordance with RG 1.200 prior to a risk-informed submittal. The resulting fire risk assessment model is used as the analytical tool to perform Fire Risk Evaluations during the transition process.

Section 4.5.1.1 describes the Internal Events PRA model. Section 4.5.1.2 describes the Fire PRA model. Section 4.5.1.3 describes the results and resolution of the peer review of the Fire PRA, and Section 4.5.1.4 describes insights gained from the Fire PRA.

4.5.1.1 Internal Events PRA

The MNS base internal events PRA was the starting point for the Fire PRA.

The most recent full scope MNS Internal Events PRA Peer Review was performed in October 2000 using the peer review process described in Nuclear Energy Institute (NEI) 00-02. More recently, focused scope peer reviews have been conducted on the MNS Large Early Release Frequency (LERF) PRA model and the MNS Internal Flooding PRA model. The MNS Internal Events PRA was judged to meet Capability Category II consistent with RG 1.205 guidance. The Internal Events PRA quality and results are discussed in Attachment U.

4.5.1.2 Fire PRA

The development of the Fire PRA Model was based on the current approved Full Power Internal Events (FPIE) PRA model. The process for creation of the Fire PRA model and quantification of that model use a methodology consistent with the guidance provided in NUREG/CR-6850/EPRI TR 1011989 and subsequent clarifications documented in responses to NFPA 805 FAQs. No unreviewed methods or deviations from NUREG/CR-6850 were utilized in the Fire PRA model development.

The Fire PRA quality and results are discussed in the subsequent sections and in Attachments V and W, respectively.

Fire Model Utilization in the Application

Fire modeling was performed as part of the Fire PRA development (NFPA 805 Section 4.2.4.2). RG 1.205, Regulatory Position 4.2 and Section 5.1.2 of NEI 04-02, provide guidance to identify fire models that are acceptable to the NRC for plants implementing a risk-informed, performance-based licensing basis.

The fire models used and the acceptability of their use are included in Attachment J.

4.5.1.3 Results of Fire PRA Peer Review

The MNS Fire PRA Peer Review was performed on September 14-18, 2009 using RG 1.200, Revision 2, the combined PRA standard, ASME/ANS RA-Sa–2009 as endorsed by RG 1.200, Revision 2, and the NEI 07-12 Fire PRA peer review process. The purpose of this review was to provide a method for establishing the technical quality and adequacy of the Fire PRA for the spectrum of potential risk-informed plant licensing applications for which the Fire PRA may be used. No changes have been made to the Fire PRA model since completion of the September 2009 peer review that would constitute an upgrade (based on the definition provided in ASME/ANS RA-Sa-2009); therefore, no additional peer reviews, partial scope or focused scope, were required to be conducted for the MNS Fire PRA.

The MNS Fire PRA was judged to meet Capability Category II consistent with RG 1.205 guidance. A total of twenty-one (21) F&O findings and twenty-three (23) F&O suggestions (plus 1 best practice F&O) were generated. The peer review report noted that there were sixteen (16) supporting requirements where the standard was not met. The findings have been resolved with the dispositions summarized in Table V-1. The impact of those areas where only the Capability Category I requirement was met is summarized in Table V-2. All F&Os that were defined as suggestions have been dispositioned and will be available for NRC review along with the dispositions related to the supplemental F&Os that were generated outside the consensus process. The Fire PRA is adequate to support the NFPA 805 Licensing Basis.

4.5.1.4 Risk Insights

Risk insights were documented as part of the development of the Fire PRA. The total plant fire Core Damage Frequency (CDF)/LERF was derived using the NUREG/CR-6850 methodology for fire PRA development and is useful in identifying the areas of the plant where fire risk is greatest. A review of the fire initiating events that individually represent greater than 1% of the calculated fire risk is included as Attachment W.

4.5.2 Performance-Based Approaches

NFPA 805 outlines the approaches for conducting performance-based analyses. As specified in Section 4.2.4, there are two types of analyses performed for the performance-based approach:

- Fire Modeling (NFPA 805 Section 4.2.4.1).
- Fire Risk Evaluation (NFPA 805 Section 4.2.4.2).

4.5.2.1 Fire Modeling Approach

The fire modeling approach was not utilized for the transition.

4.5.2.2 Fire Risk Approach

Overview of Evaluation Process

The Fire Risk Evaluations were completed as part of the MNS NFPA 805 transition. These Fire Risk Evaluations were developed using the process described below. This methodology is based upon the requirements of NFPA 805, industry guidance in NEI 04-02, and RG 1.205. These are summarized in Table 4-1.

Table 4-1 Fire Risk Evaluation Guidance Summary Table

Document	Section(s)	Topic
NFPA 805	2.2(h), 4.2.4, A.2.2(h), A.2.4.4, D.5	Change Evaluation (2.2(h), 2.2.9, 2.4.4 A.2.2(h), A.2.4.4, D.5) Risk of Recovery Actions (4.2.4) Use of Fire Risk Evaluation (4.2.4.2)
NEI 04-02 Revision 2	4.4, 5.3, Appendix B, Appendix I, Appendix J	Change Evaluation, Change Evaluation Forms (App. I), No specific discussion of Fire Risk Evaluation
RG 1.205 Revision 1	C.2.2.4, C.2.4, C.3.2	Risk Evaluations (C.2.2.4) Recovery Actions (C.2.4)

During the transition to NFPA 805, variances from the deterministic approach in Section 4.2.3 of NFPA 805 were evaluated using a Fire Risk Evaluation per Section 4.2.4.2 of NFPA 805. A Fire Risk Evaluation was performed for each Fire Area containing VFDRs of Section 4.2.3 of NFPA 805.

If the Fire Risk Evaluation meets the acceptance criteria, this is confirmation that a success path effectively remains free of fire damage and that the performance-based approach is acceptable per Section 4.2.4.2 of NFPA 805.

The Fire Risk Evaluation process consists of the following steps (Figure 4-7 depicts the Fire Risk Evaluation process used during transition). This is generally based on FAQ 07-0054 Revision 1:

Step 1 – Preparation for the Fire Risk Evaluation.

- Definition of the Variances from the Deterministic Requirements. The definition of the VFDR includes a description of problem statement and the section of NFPA 805 that is not met, type of VFDR (e.g., separation issue or degraded fire protection system), and proposed evaluation per applicable NFPA 805 section.
- Some VFDR's are resolved deterministically by committed modifications. The list of committed modifications are found in Table S-2 of Attachment S. VFDR's resolved deterministically were not included in the fire risk evaluation summary.
- Preparatory Evaluation – Fire Risk Evaluation Team Review. Using the information obtained during the development of the NEI 04-02 B-3 Table and the

Fire PRA, a team review of the VFDR was performed. Depending on the scope and complexity of the VFDR, the team may include the Safe Shutdown Engineer, the Fire Protection Engineer, and the Fire PRA Engineer. The purpose and objective of this team review was to address the following;

- Review of the Fire PRA modeling treatment of VFDR.
- Ensure discrepancies were captured and resolved.

Step 2 – Performed the Fire Risk Evaluation

- The Evaluator coordinated as necessary with the Safe Shutdown Engineer, Fire Protection Engineer and Fire PRA Engineer to assess the VFDR using the Fire Risk Evaluation process to perform the following:
  - Change in Risk Calculation with consideration for additional risk of recovery actions and required fire protection systems and features due to fire risk.
  - Fire Area change in risk summary.

Step 3 – Reviewed the Acceptance Criteria

- The acceptance criteria for the Fire Risk Evaluation consist of two parts. One is quantitatively based and the other is qualitatively based. The quantitative figures of merit are ΔCDF and ΔLERF. The qualitative factors are defense-in-depth and safety margin.
  - Risk Acceptance Criteria. The transition risk evaluation was measured quantitatively for acceptability using the ΔCDF and ΔLERF criteria from RG 1.174, as clarified in RG 1.205 Section 2.2.4.
  - Defense-in-Depth. A review of the impact of the change on defense-in-depth was performed, using the guidance NEI 04-02. NFPA 805 defines defense-in-depth as:
    - Preventing fires from starting.
    - Rapidly detecting fires and controlling and extinguishing promptly those fires that do occur, thereby limiting damage.
    - Providing adequate level of fire protection for structures, systems and components important to safety; so that a fire that is not promptly extinguished will not prevent essential plant safety functions from being performed.

    In general, the defense-in-depth requirement was considered to be satisfied if the proposed change does not result in a substantial imbalance among these elements (or echelons).

    The review of defense-in-depth was qualitative and addressed each of the elements with respect to the proposed change. Defense-in-depth was performed on a Fire Area basis.

    Fire protection features and systems relied upon to ensure defense-in-depth were identified as a result of the assessment of defense-in-depth.
  - Safety Margin Assessment. A review of the impact of the change on safety margin was performed. An acceptable set of guidelines for making that

assessment is summarized below. Other equivalent acceptance guidelines may also be used.

- Codes and standards or their alternatives accepted for use by the NRC are met, and
- Safety analysis acceptance criteria in the licensing basis (e.g., FSAR, supporting analyses) are met, or provides sufficient margin to account for analysis and data uncertainty.

The requirements related to safety margins for the change analysis are described for each of the specific analysis types used in support of the Fire Risk Evaluation.

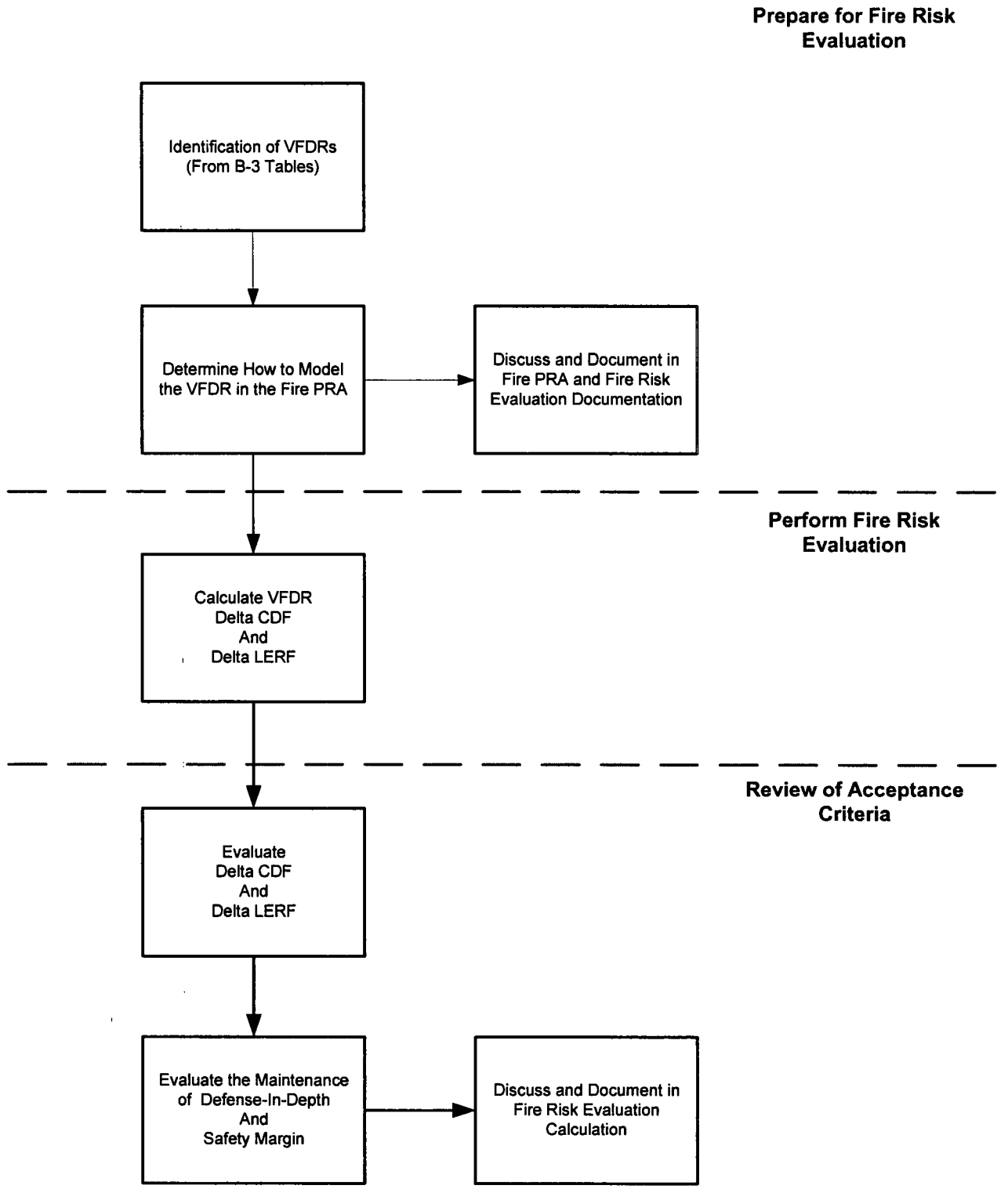

Figure 4-7 – Fire Risk Evaluation Process (NFPA 805 Transition)
[Based on FAQ 07-0054 Revision 1]

Results of Evaluation Process

Disposition of VFDRs

The MNS existing post-fire SSA and the NFPA 805 transition project activities have identified a number of variances from the deterministic requirements of NFPA 805 Section 4.2.3. These variances were dispositioned using the fire risk evaluation process.

Each variance dispositioned using a Fire Risk Evaluation was assessed against the Fire Risk Evaluation acceptance criteria of ΔCDF and ΔLERF; and maintenance of defense-in-depth and safety margin criteria from Section 5.3.5 of NEI 04-02 and RG 1.205. The results of these calculations are summarized in Attachment C, NEI 04-02 Table B-3 – Fire Area Transition.

No recovery actions were specifically credited to satisfy the risk criteria for the population of VFDRs that state there is a pre-existing OMA and the disposition is identified as no further action.

Following completion of transition activities and planned modifications and program changes, the plant will be compliant with 10 CFR 50.48(c).

Risk Change Due to NFPA 805 Transition

In accordance with the guidance in RG 1.205, Section C.2.2.4, Risk Evaluations, risk increases or decreases for each Fire Area using Fire Risk Evaluations and the overall plant should be provided. Note that the risk increase due to the use of recovery actions was included in the risk change for transition for each Fire Area.

RG 1.205 Section C.2.2.4.2 states in part

> *"The total increase or decrease in risk associated with the implementation of NFPA 805 for the overall plant should be calculated by summing the risk increases and decreases for each fire area (including any risk increases resulting from previously approved recovery actions). The total risk increase should be consistent with the acceptance guidelines in Regulatory Guide 1.174. Note that the acceptance guidelines of Regulatory Guide 1.174 may require the total CDF, LERF, or both, to evaluate changes where the risk impact exceeds specific guidelines. If the additional risk associated with previously approved recovery actions is greater than the acceptance guidelines in Regulatory Guide 1.174, then the net change in total plant risk incurred by any proposed alternatives to the deterministic criteria in NFPA 805, Chapter 4 (other than the previously approved recovery actions), should be risk neutral or represent a risk decrease."*

The risk increases and decreases are provided in Attachment W. Note that when used in the context of delta risk, 0.00E+00 is defined as negligible, including cases where the results are below the truncation limit or where the VFDRs were not modeled due to their insignificant contribution to risk.

4.6 Monitoring Program

4.6.1 Overview of NFPA 805 Requirements and NEI 04-02 Guidance on the NFPA 805 Fire Protection System and Feature Monitoring Program

Section 2.6 of NFPA 805 states:

> *"A monitoring program shall be established to ensure that the availability and reliability of the fire protection systems and features are maintained and to assess the performance of the fire protection program in meeting the performance criteria. Monitoring shall ensure that the assumptions in the engineering analysis remain valid."*

As part of the transition review, the adequacy of the inspection and testing program to address fire protection systems and equipment within plant inspection and the compensatory measures programs should be reviewed. In addition, the adequacy of the plant corrective action program in determining the causes of equipment and programmatic failures and minimizing their recurrence should also be reviewed as part of the transition to a risk-informed, performance-based licensing basis.

4.6.2 Overview of Post-Transition NFPA 805 Monitoring Program

This section describes the process that will be utilized to implement the post-transition NFPA 805 monitoring program. The monitoring program will be implemented in accordance with FAQ 10-0059 after the safety evaluation issuance as part of the fire protection program transition to NFPA 805. See Implementation Item 5 in Table S-3 of Attachment S. The monitoring process is comprised of four phases:

- Phase 1 – Scoping.
- Phase 2 – Screening Using Risk Criteria.
- Phase 3 – Risk Target Value Determination.
- Phase 4 – Monitoring Implementation.

Figure 4-8 provides detail on the Phase 1 and 2 processes.

The results of these phases will be documented in the MNS NFPA 805 Monitoring Program Calculation developed during implementation.

Phase 1 – Scoping

In order to meet the NFPA 805 requirements for monitoring, the following categories of SSCs and programmatic elements will be reviewed during the implementation phase for inclusion in the NFPA 805 monitoring program:

- SSCs required to comply with NFPA 805, specifically:
  - Fire protection systems and features:
    - Required by the NSCA.
    - Modeled in the Fire PRA.
    - Required by Chapter 3 of NFPA 805.

- NSCA equipment[4]:
  - Nuclear safety equipment.
  - Fire PRA equipment.
  - NPO equipment.
- SSCs relied upon to meet radioactive release criteria.

- Fire Protection Programmatic Elements.

Phase 2 – Screening Using Risk Criteria

The equipment from Phase 1 scoping will be screened to determine the appropriate level of NFPA 805 monitoring. As a minimum, the SSCs identified in Phase 1 will be part of an inspection and test program and system/program health reporting. If not in the current program, the SSCs will be added in order to assure that the criteria can be met reliably.

The following screening process will be used to determine those SSCs that may require additional monitoring beyond normal inspection and test program and system/program health reporting and will be documented in the MNS NFPA 805 Monitoring Program Calculation.

1. Fire Protection Systems and Features

Those fire protection systems and features identified in Phase 1 are candidates for additional monitoring in the NFPA 805 program commensurate with risk significance.

Risk significance is determined at the component, programmatic element, and/or functional level on an individual Fire Area basis. Compartments smaller than Fire Areas may be used provided the compartments are independent (i.e., share no fire protection SSCs). If compartments smaller than Fire Areas are used the basis will be documented in the MNS NFPA 805 Monitoring Program Calculation to be developed during implementation.

The Fire PRA is used to establish the risk significance based on the following screening criteria:

Risk Achievement Worth (RAW) of the monitored parameter ≥ 2.0

(AND) either

(CDF) x (RAW) ≥ 1.0E-7 per year

(OR)

(LERF) x (RAW) ≥ 1.0E-8 per year

CDF, LERF, and $RAW_{(monitored\ parameter)}$ are calculated for each Fire Area. The 'monitored parameter' will be established at a level commensurate with the amenability of the parameter to risk measurement (e.g., a fire barrier may be more conducive to risk measurement than an individual barrier penetration).

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[4] For the purposes of the NFPA 805 Monitoring, "NSCA equipment" is intended to include Nuclear Safety Equipment, Fire PRA equipment, and NPO equipment.

Fire protections systems and features that meet or exceed the criteria identified above are considered High Safety Significant (HSS) and will be included in the monitoring program contained in the Monitoring Program Software. The remaining required fire protection systems and features will be monitored via the existing inspection and test program and/or in the existing system / program health reporting as described in EDM 201, "Risk Category, Scoping, Health Grouping, and ER Strategy."

2. Nuclear Safety Capability Assessment Equipment

Required NSCA equipment, except the NPO scope, identified in Phase 1 will be screened for safety significance using the Fire PRA and the Maintenance Rule guidelines differentiating HSS equipment from Low Safety Significant (LSS) equipment. The screening will also ensure that the Maintenance Rule functions are consistent with the required functions of the NSCA equipment.

HSS NSCA equipment not currently monitored in Maintenance Rule will be included in the Maintenance Rule. All NSCA equipment that are not HSS are considered LSS and need not be included in the monitoring program.

For non-power operational modes, the qualitative use of fire prevention to manage fire risk during Higher Risk Evolutions (HREs) does not lend itself to quantitative risk measurement. Therefore, fire risk management effectiveness is monitored programmatically similar to combustible material controls and other fire prevention programs. Additional monitoring beyond inspection and test programs and system/program health reporting is not considered necessary.

3. SSCs Relied upon for Radioactive Release Criteria

The evaluations performed to meet the radioactive release performance criteria are qualitative in nature. The SSCs relied upon to meet the radioactive release performance criteria are not amenable to quantitative risk measurement. Additionally, since 10 CFR 20 limits (which are lower than releases due to core damage and containment breach) for radiological effluents are not being exceeded, equipment relied upon to meet the radioactive release performance criteria is considered inherently low risk. Therefore, additional monitoring beyond inspection and test programs and system/program health reporting is not considered necessary.

4. Fire Protection Programmatic Elements

In accordance with FAQ 10-0059 and the MNS NFPA 805 Monitoring Program, monitoring of programmatic elements is required in order to "assess the performance of the fire protection program in meeting the performance criteria". These programs form the bases for many of the analytical assumptions used to evaluate compliance with NFPA 805 requirements. Programmatic aspects include:

- Transient Combustible Control; Transient Exclusion Zones.
- Hot Work Control; Administrative Controls.
- Impairment and compensatory measures including program compliance and effectiveness.
- Fire Brigade Effectiveness.

Monitoring of programmatic elements is more qualitative in nature since the programs do not lend themselves to the numerical methods of reliability and availability. Therefore, monitoring is conducted using the existing system and program health programs. Fire protection health reports, self-assessments, regulator and insurance company reports provide inputs to the monitoring program.

Phase 3 – Risk Target Value Determination

Phase 3 establishes the target values for reliability and availability for the fire protection systems and features that met or exceeded the screening criteria and the HSS NSCA equipment established in Phase 2.

Target values for reliability and availability for the fire protection systems and features are established at the component level, program level, or functionally through the use of the pseudo system or 'performance monitoring group' concept. The actual action level is determined based on the number of component, program or functional failures within a sufficiently bounding time period (~2-3 operating cycles). In addition, the EPRI Technical Report (TR) 1006756, "Fire Protection Surveillance Optimization and Maintenance Guide for Fire Protection Systems and Features" will be used as input for establishing reliability targets, action levels, and monitoring frequency.

Since the HSS NSCA equipment will be identified using the Maintenance Rule guidelines, the associated equipment specific performance criteria will be established as in the Maintenance Rule.

When establishing the action level threshold for reliability and availability, the action level will be no lower than the fire PRA assumptions. Adverse trends and unacceptable levels of availability, reliability, and performance will be reviewed against established action levels. The monitoring program failure criteria and action level targets will be documented in the MNS NFPA 805 Monitoring Program Calculation.

Note that fire protection systems and features, NSCA equipment, SSCs required to meet the radioactive release criteria, and fire protection program elements that do not meet the screening criteria in Phase 2 will be included in the existing inspection and test programs and the system and program health programs. Reliability and availability criteria will not be assigned.

Phase 4 – Monitoring Implementation

Phase 4 is the implementation of the monitoring program, once the monitoring scope and criteria are established. Monitoring consists of periodically gathering, trending, and evaluating information pertinent to the performance, and/or availability of the equipment and comparing the results with the established goals and performance criteria to verify that the goals are being met. Results of monitoring activities will be analyzed in timely manner to assure that appropriate action is taken. The corrective action process will be used to address performance of fire protection and nuclear safety SSCs that do not meet performance criteria.

For fire protection systems and features and NSCA HSS equipment that are monitored, unacceptable levels of availability, reliability, and performance will be reviewed against the established action levels. If an action level is triggered, corrective action in accordance with the Corrective Action Program will be initiated to identify the negative

trend. A corrective action plan will then be developed to ensure the performance returns to the established level.

When applicable, a sensitivity study can be performed to determine the margin below the action level that still provides acceptable fire PRA results to help prioritize corrective actions if the action level is reached.

A periodic assessment will be performed (e.g., at a frequency of approximately every two to three operating cycles), taking into account, where practical, industry wide operating experience. This will be conducted as part of other established assessment activities. Issues that will be addressed include:

- Review systems with performance criteria. Do performance criteria still effectively monitor the functions of the system? Do the criteria still monitor the effectiveness of the fire protection and NSCA systems?
- Have the supporting analyses been revised such that the performance criteria are no longer applicable or new fire protection and NSCA SSCs, programmatic elements and/ or functions need to be in scope?
- Based on the performance during the assessment period, are there any trends in system performance that should be addressed that are not being addressed?

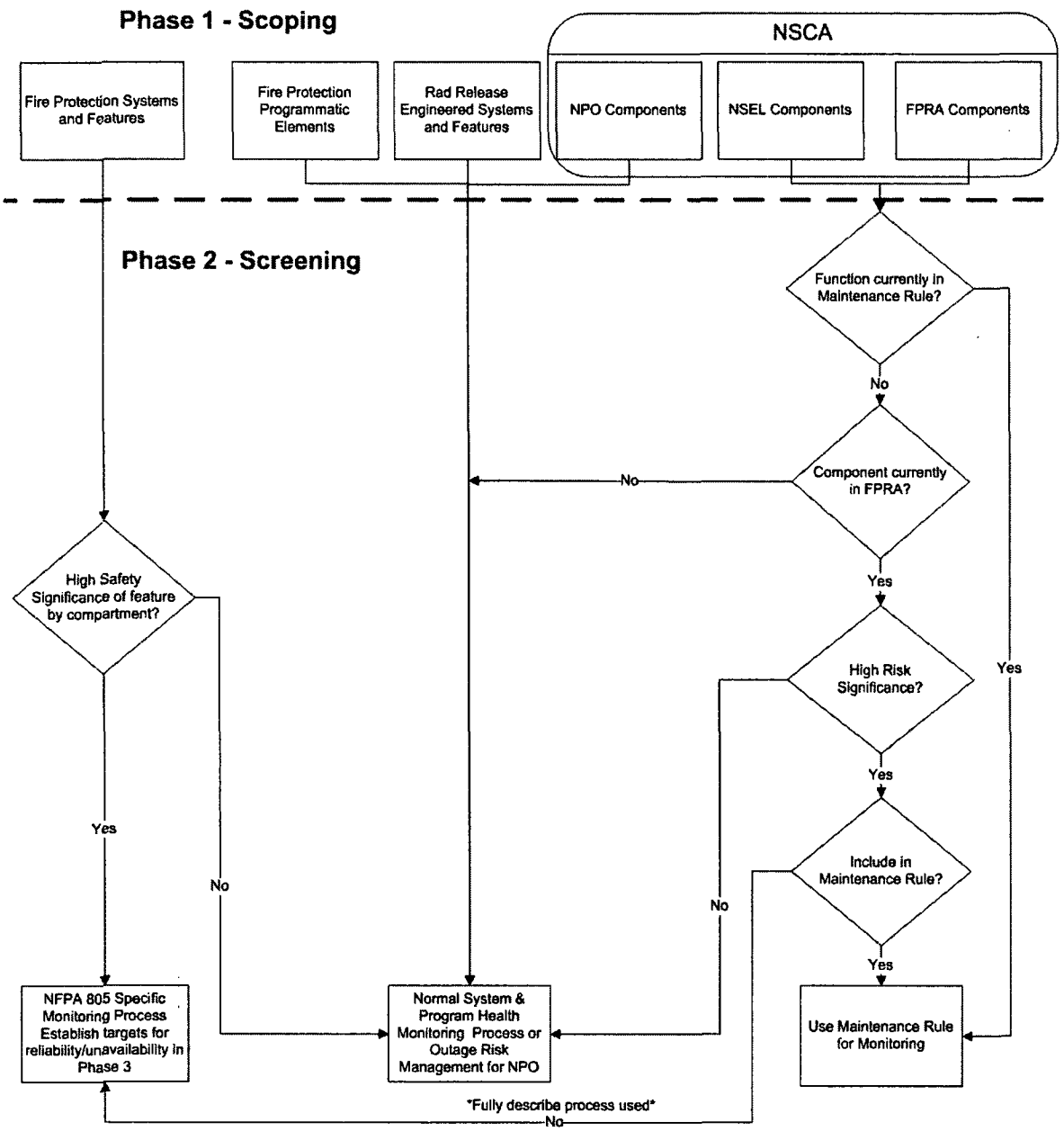

Figure 4-8 – NFPA 805 Monitoring – Scoping and Screening

Since the HSS SSCs will be identified using the Maintenance Rule guidelines, the associated SSC specific performance criteria will be established as in the Maintenance Rule. The actual action level is determined based on the number of component, program or functional failures within a sufficiently bounding time period (~2-3 operating cycles). Adverse trends and unacceptable levels of availability, reliability, and performance will be reviewed against established action levels. The Monitoring Program failure criteria and action level targets will be documented.

4.7 Program Documentation, Configuration Control, and Quality Assurance

4.7.1 Compliance with Documentation Requirements in Section 2.7.1 of NFPA 805

In accordance with the requirements and guidance in NFPA 805 Section 2.7.1 and NEI 04-02, MNS has documented analyses to support compliance with 10 CFR 50.48(c). The analyses were performed in accordance with MNS processes for ensuring assumptions are clearly defined, that results are easily understood, that results are clearly and consistently described, and that sufficient detail is provided to allow future review of the entire analyses.

Analyses, as defined by NFPA 805 Section 2.4, performed to demonstrate compliance with 10 CFR 50.48(c) will be maintained for the life of the plant and organized to facilitate review for accuracy and adequacy. Note these analyses do not include items such as periodic tests, hot work permits, fire impairments, control of transient permits, etc.

The Fire Protection Design Basis Document described in Section 2.7.1.2 of NFPA 805 and necessary supporting documentation described in Section 2.7.1.3 of NFPA 805 will be created as part of transition to 10 CFR 50.48(c) to ensure program implementation following receipt of the safety evaluation. Appropriate cross references will be established to supporting documents as required by MNS processes. See Implementation Item 9 in Table S-3 of Attachment S. Figure 4-9 depicts the planned post-transition documentation and relationships.

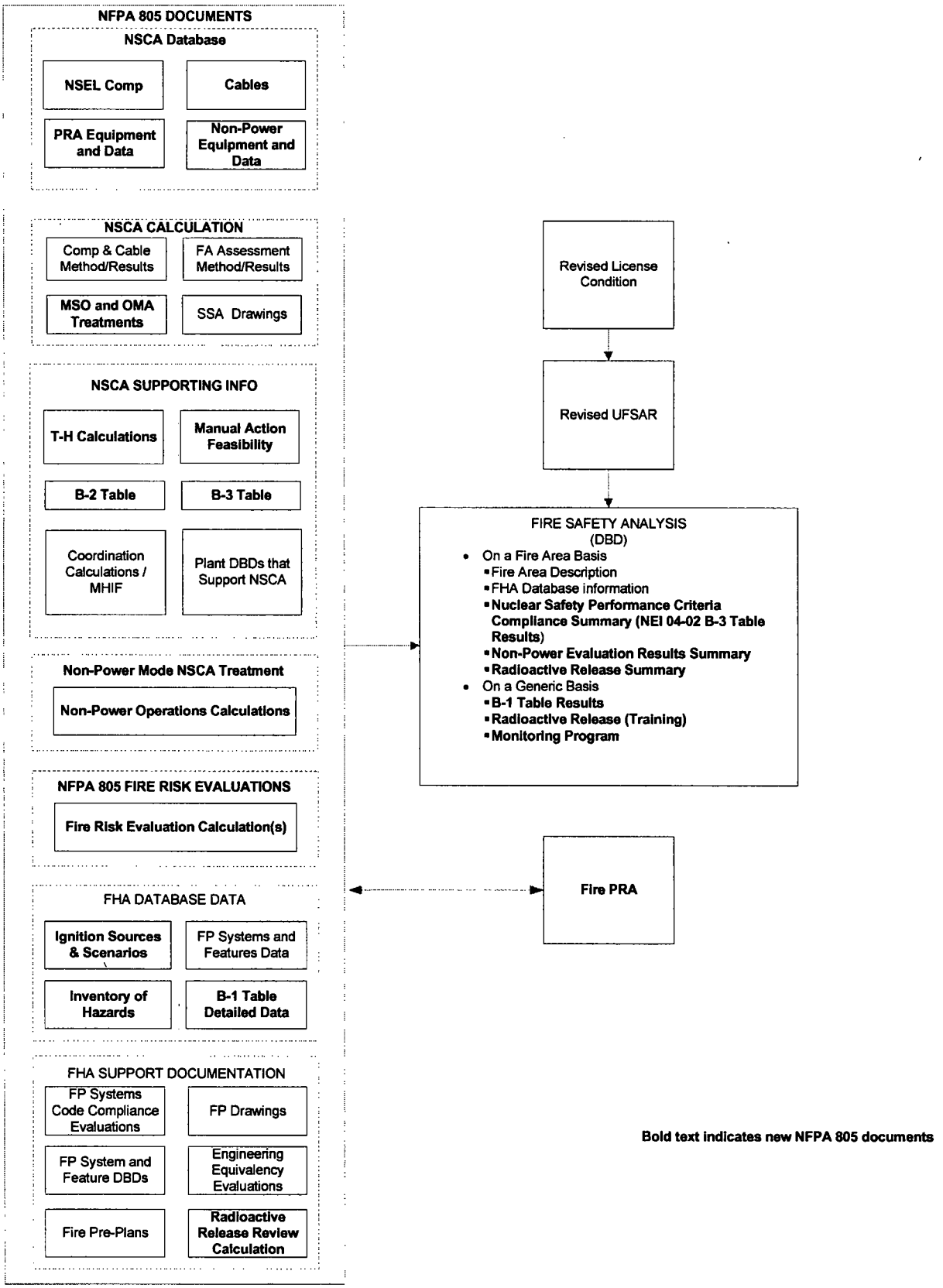

Figure 4-9 – NFPA 805 Planned Post-Transition Documents and Relationships

4.7.2 Compliance with Configuration Control Requirements in Section 2.7.2 and 2.2.9 of NFPA 805

Program documentation established, revised, or utilized in support of compliance with 10 CFR 50.48(c) is subject to Duke Energy's configuration control processes that meet the requirements of Section 2.7.2 of NFPA 805. This includes the appropriate procedures and configuration control processes for ensuring that changes impacting the fire protection program are reviewed appropriately. The RI-PB post transition change process methodology is based upon the requirements of NFPA 805, and industry guidance in NEI 04-02, and RG 1.205. These requirements are summarized in Table 4-2.

Table 4-2 Change Evaluation Guidance Summary Table

Document	Section(s)	Topic
NFPA 805	2.2(h), 2.2.9, 2.4.4, A.2.2(h), A.2.4.4, D.5	Change Evaluation
NEI 04-02	5.3, Appendix B, Appendix I, Appendix J	Change Evaluation, Change Evaluation Forms (Appendix I)
RG 1.205	C.2.2.4, C.3.1, C.3.2, C.4.3	Risk Evaluation, Standard License Condition, Change Evaluation Process, Fire PRA

The Plant Change Evaluation Process consists of the following 4 steps and is depicted in Figure 4-10:

- Defining the Change.
- Performing the Preliminary Risk Screening.
- Performing the Risk Evaluation.
- Evaluating the Acceptance Criteria.

Change Definition

The Change Evaluation process begins by defining the change or altered condition to be examined and the baseline configuration as defined by the Design Basis and Licensing Basis (NFPA 805 Licensing Basis post-transition).

1. The baseline is defined as that plant condition or configuration that is consistent with the Design Basis and Licensing Basis (NFPA 805 Licensing Basis post-transition).
2. The changed or altered condition or configuration that is not consistent with the Design Basis and Licensing Basis is defined as the proposed alternative.

Preliminary Risk Review

Once the definition of the change is established, a screening is then performed to identify and resolve minor changes to the fire protection program. This screening is consistent with fire protection regulatory review processes in place at nuclear plants under traditional licensing bases. This screening process is modeled after the NEI 02-03 process. This process will address most administrative changes (e.g., changes to the combustible control program, organizational changes, etc.).

The characteristics of an acceptable screening process that meets the "assessment of the acceptability of risk" requirement of Section 2.4.4 of NFPA 805 are:

- The quality of the screen is sufficient to ensure that potentially greater than minimal risk increases receive detailed risk assessments appropriate to the level of risk.
- The screening process must be documented and be available for inspection by the NRC.
- The screening process does not pose undue evaluation or maintenance burden.

If any of the above is not met, proceed to the Risk Evaluation step.

Risk Evaluation

The screening is followed by engineering evaluations that may include fire modeling and risk assessment techniques. The results of these evaluations are then compared to the acceptance criteria. Changes that satisfy the acceptance criteria of NFPA 805 Section 2.4.4 and the license condition can be implemented within the framework provided by NFPA 805. Changes that do not satisfy the acceptance criteria cannot be implemented within this framework. The acceptance criteria require that the resultant change in CDF and LERF be consistent with the license condition. The acceptance criteria also include consideration of defense-in-depth and safety margin, which would typically be qualitative in nature.

The risk evaluation involves the application of fire modeling analyses and risk assessment techniques to obtain a measure of the changes in risk associated with the proposed change. In certain circumstances, an initial evaluation in the development of the risk assessment could be a simplified analysis using bounding assumptions provided the use of such assumptions does not unnecessarily challenge the acceptance criteria discussed below.

Acceptability Determination

The Change Evaluations are assessed for acceptability using the ΔCDF (change in core damage frequency) and ΔLERF (change in large early release frequency) criteria from the license condition. The proposed changes are also assessed to ensure they are consistent with the defense-in-depth philosophy and that sufficient safety margins were maintained.

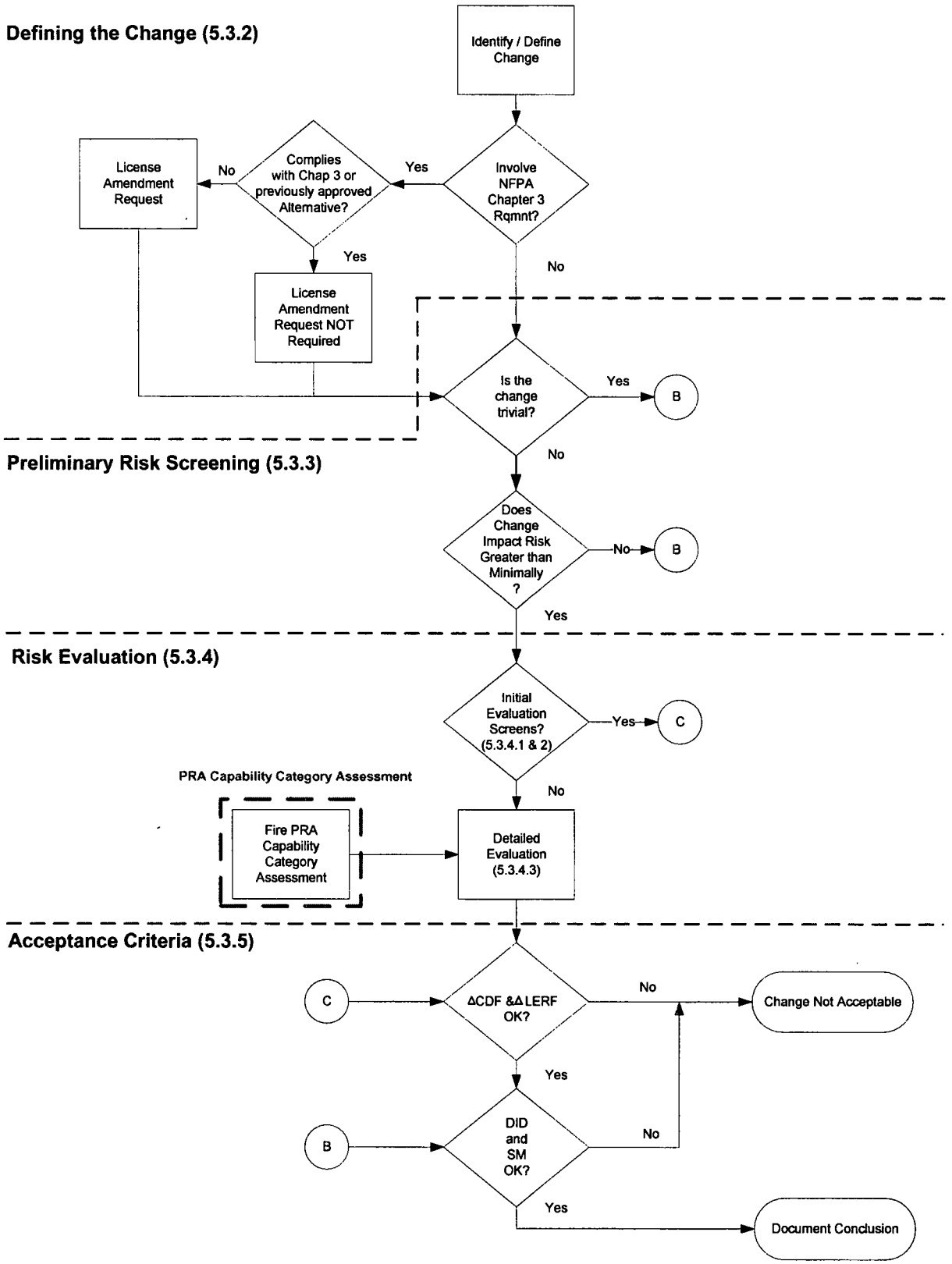

Figure 4-10 Plant Change Evaluation [NEI 04-02 Figure 5-1]
Note references in Figure refer to NEI 04-02 Sections

The MNS Fire Protection Program configuration is defined by the program documentation. To the greatest extent possible, the existing configuration control processes for modifications, calculations and analyses, and Fire Protection Program License Basis Reviews will be utilized to maintain configuration control of the Fire Protection program documents. The configuration control procedures which govern the various MNS documents and databases that currently exist will be revised to reflect the new NFPA 805 licensing bases requirements.

Several NFPA 805 document types such as: NSCA Supporting Information, Non-Power Mode NSCA Treatment, etc., generally require new control procedures and processes to be developed since they are new documents and databases created as a result of the transition to NFPA 805. The new procedures will be modeled after the existing processes for similar types of documents and databases. System level design basis documents will be revised to reflect the NFPA 805 role that the system components now play.

The process for capturing the impact of proposed changes to the plant on the Fire Protection Program will continue to be a multiple step review. The first step of the review is an initial screening for process users to determine if there is a potential to impact the Fire Protection program as defined under NFPA 805 through a series of screening questions/checklists contained in one or more procedures depending upon the configuration control process being used. Reviews that identify potential Fire Protection program impacts will be sent to qualified individuals (Fire Protection, Safe Shutdown, Fire PRA) to ascertain the program impacts, if any. If Fire Protection program impacts are determined to exist as a result of the proposed change, the issue would be resolved by one of the following:

- Deterministic Approach: Comply with NFPA 805 Chapter 3 and 4.2.3 requirements .
- Performance-Based Approach: Utilize the NFPA 805 change process developed in accordance with NEI 04-02, RG 1.205, and the NFPA 805 fire protection license condition to assess the acceptability of the proposed change. This process would be used to determine if the proposed change could be implemented "as-is" or whether prior NRC approval of the proposed change is required.

This process follows the requirements in NFPA 805 and the guidance outlined in RG 1.174 which requires the use of qualified individuals, procedures that require calculations be subject to independent review and verification, record retention, peer review, and a corrective action program that ensures appropriate actions are taken when errors are discovered. See implementation Item 10 in Table S-3 of Attachment S.

4.7.3 Compliance with Quality Requirements in Section 2.7.3 of NFPA 805

Fire Protection Program Quality

Duke Energy will maintain the Fire Protection Quality Assurance program. The QA Topical will be revised to update the definition of QA 3 to match post NFPA 805 criteria. See Implementation Item 15 in Table S-3 of Attachment S.

During the transition to 10 CFR 50.48(c), MNS performed work in accordance with the quality requirements of Section 2.7.3 of NFPA 805.

Future NFPA 805 work will be conducted in accordance with the requirements of NFPA 805 Section 2.7.3.

Fire PRA Quality

Configuration control of the Fire PRA model will be maintained by integrating the Fire PRA model into the existing processes used to ensure configuration control of the internal events PRA model. This process conforms with Section 1-5 of the ASME PRA Standard and ensures that Duke Energy maintains an as-built, as-operated PRA model of the plant. The process has been peer reviewed. Quality assurance of the Fire PRA is assured via the same processes applied to the internal events model.

This process follows the guidance outlined in RG 1.174 which requires the use of qualified individuals, procedures that require calculations be subject to independent review and verification, record retention, peer review, and a corrective action program that ensures appropriate actions are taken when errors are discovered. Although the entire scope of the formal 10 CFR 50 Appendix B program is not applied to the PRA models or processes in general, often parts of the program are used as a convenient method for complying with the requirements of RG 1.174.

With respect to Quality Assurance Program requirements for independent reviews of calculations and evaluations, those existing requirements for Fire Protection Program documents will remain unchanged. Duke Energy specifically requires that the calculations and evaluations in support of the NFPA 805 LAR, exclusive of the Fire PRA, be performed within the scope of the QA program which requires independent review as defined by Duke Energy procedures.

The Fire PRA follows the recommendations of NUREG/CR-6850, the sources of uncertainty in the Fire PRA were identified and specific parameters were analyzed for sensitivity in support of the NFPA 805 Fire Risk Evaluation process. Specifically with regard to uncertainty, an uncertainty and sensitivity matrix was developed and included in MNS calculation, "McGuire Fire PRA Summary Report." In addition to the sensitivity and uncertainty analyses provided in the Summary Report, additional sensitivity analyses in support of delta risk are addressed in calculation, "NFPA 805 Fire PRA Application Calculation."

While the removal of conservatism inherent in the Fire PRA is a long-term goal, the Fire PRA results were deemed sufficient for evaluating the risk associated with this application. While Duke Energy continues to strive toward a more "realistic" estimate of fire risk, use of mean values continues to be the best estimate of fire risk. During the Fire Risk Evaluation process, the uncertainty and sensitivity associated with specific Fire PRA parameters were considerations in the evaluation of the change in risk relative to the applicable acceptance thresholds.

Specific Requirements of NFPA 805 Section 2.7.3

The following discusses how the requirements of NFPA 805 Section 2.7.3 were met during the transition process. Post-transition, Duke Energy will perform work in accordance with NFPA 805 Section 2.7.3 requirements.

NFPA 805 Section 2.7.3.1 – Review

Analyses, calculations, and evaluations performed in support of compliance with 10 CFR 50.48(c) are performed in accordance with Duke Energy procedures that require independent review.

NFPA 805 Section 2.7.3.2 – Verification and Validation

Calculational models and numerical methods used in support of compliance with 10 CFR 50.48(c) were verified and validated as required by Section 2.7.3.2 of NFPA 805.

NFPA 805 Section 2.7.3.3 – Limitations of Use

Engineering methods and numerical models used in support of compliance with 10 CFR 50.48(c) were applied appropriately as required by Section 2.7.3.3 of NFPA 805.

NFPA 805 Section 2.7.3.4 – Qualification of Users

Cognizant personnel who use and apply engineering analysis and numerical methods in support of compliance with 10 CFR 50.48(c) are competent and experienced as required by Section 2.7.3.4 of NFPA 805.

During the transition to 10 CFR 50.48(c), work was performed in accordance with the quality requirements of Section 2.7.3 of NFPA 805. Personnel who used and applied engineering analysis and numerical methods (e.g. fire modeling) in support of compliance with 10 CFR 50.48(c) are competent and experienced as required by NFPA 805 Section 2.7.3.4.

Post-transition, cognizant personnel who use and apply engineering analysis and numerical models shall be competent in this field and experienced in the application of these methods as they relate to nuclear power plants, nuclear power plant fire protection, and power plant operations. Duke Energy will develop and maintain qualification requirements for individuals assigned various tasks. Individuals will be qualified to appropriate job performance requirements per ACAD 98-004. Engineering training guidelines will be developed to identify and document required training and mentoring to ensure individuals are appropriately qualified per the requirements of NFPA 805 Section 2.7.3.4 to perform assigned work. See Implementation Item 11 in Table S-3 of Attachment S.

NFPA 805 Section 2.7.3.5 – Uncertainty Analysis

Uncertainty analyses were performed as required by 2.7.3.5 of NFPA 805 and the results were considered in the context of the application. This is of particular interest in fire modeling and Fire PRA development. Note: 10 CFR 50.48(c)(2)(iv) states that NFPA 805 Section 2.7.3.5 is not required for the deterministic approach because conservatism is included in the deterministic criteria.

4.8 Summary of Results

4.8.1 Results of the Fire Area Review

A summary of the NFPA 805 compliance basis and the required fire protection systems and features is provided in Table C-2 of Attachment C. The table provides the following information from the NEI 04-02 Table B-3:

- Fire Area: Fire Area/Room ID Identifier.
- Description: Fire Area Description.
- NFPA 805 Regulatory Basis: Post-transition NFPA 805 Chapter 4 compliance basis (Note: Compliance is determined on a Fire Area basis).
- Required Fire Protection System / Feature: Detection / suppression required in the Fire Area based on NFPA 805 Chapter 4 compliance. Other Required Features may include Electrical Raceway Fire Barrier Systems, fire barriers, etc. The documentation of required fire protection systems and features does not include the documentation of the Fire Area boundaries. Fire Area boundaries are required and documentation of the Fire Area boundaries has been performed as part of reviews of engineering evaluations, licensing actions, or as part of the reviews of the NEI 04-02 Table B-1 process. The information is provided on a Fire Area basis. The basis for the requirement of the fire protection system / feature is designated as follows:
  - S – Separation Criteria: Systems/Features required for Chapter 4 Separation Criteria in Section 4.2.3.
  - E – EEEE/LA Criteria: Systems/Features required for acceptability of Existing Engineering Equivalency Evaluations / NRC approved Licensing Action (i.e., Exemptions/Deviations/Safety Evaluations) (Section 2.2.7).
  - R – Risk Criteria: Systems/Features required to meet the Risk Criteria for the Performance-Based Approach (Section 4.2.4).
  - D – Defense-In-Depth Criteria: Systems/Features required to maintain adequate balance of Defense-in-Depth for a Performance-Based Approach (Section 4.2.4).

Attachment W contains the Fire PRA Insights from the Fire Risk Evaluations, additional risk of recovery actions, and the change in risk on a Fire Area basis.

4.8.2 Plant Modifications and Items to be Completed During the Implementation Phase

Planned modifications, studies, and evaluations to comply with NFPA 805 are described in Attachment S.

The Fire PRA model represents the as-built, as-operated and maintained plant as it will be configured at the completion of the transition to NFPA 805. The Fire PRA model includes credit for the planned implementation of the modifications identified in Table S-2 of Attachment S. Following installation of modifications and the as-built installation details, additional refinements surrounding the modifications will be incorporated into the Fire PRA model, as required. However, these changes are not expected to be significant. See Implementation Item 12 in Table S-3 of Attachment S. No other

significant plant changes are outstanding with respect to their inclusion in the Fire PRA model.

4.8.3 Supplemental Information – Other Licensee Specific Issues

There are no MNS specific issues that warrant additional treatment in this section.

5.0 REGULATORY EVALUATION

5.1 Introduction – 10 CFR 50.48

On July 16, 2004 the NRC amended 10 CFR 50.48, Fire Protection, to add a new subsection, 10 CFR 50.48(c), which establishes alternative fire protection requirements. 10 CFR 50.48 endorses, with exceptions, NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants – 2001 Edition (NFPA 805), as a voluntary alternative for demonstrating compliance with 10 CFR 50.48 Section (b), Appendix R, and Section (f), Decommissioning.

The voluntary adoption of 10 CFR 50.48(c) by MNS does not eliminate the need to comply with 10 CFR 50.48(a) and 10 CFR 50, Appendix A, GDC 3, Fire Protection. The NRC addressed the overall adequacy of the regulations during the promulgation of 10 CFR 50.48(c) (Reference FR Notice 69 FR 33536 dated June 16, 2004, ML041340086).

> *"NFPA 805 does not supersede the requirements of GDC 3, 10 CFR 50.48(a), or 10 CFR 50.48(f). Those regulatory requirements continue to apply to licensees that adopt NFPA 805. However, under NFPA 805, the means by which GDC 3 or 10 CFR 50.48(a) requirements may be met is different than under 10 CFR 50.48(b). Specifically, whereas GDC 3 refers to SSCs important to safety, NFPA 805 identifies fire protection systems and features required to meet the Chapter 1 performance criteria through the methodology in Chapter 4 of NFPA 805. Also, under NFPA 805, the 10 CFR 50.48(a)(2)(iii) requirement to limit fire damage to SSCs important to safety so that the capability to safely shut down the plant is ensured is satisfied by meeting the performance criteria in Section 1.5.1 of NFPA 805. The Section 1.5.1 criteria include provisions for ensuring that reactivity control, inventory and pressure control, decay heat removal, vital auxiliaries, and process monitoring are achieved and maintained.*
>
> *This methodology specifies a process to identify the fire protection systems and features required to achieve the nuclear safety performance criteria in Section 1.5 of NFPA 805. Once a determination has been made that a fire protection system or feature is required to achieve the performance criteria of Section 1.5, its design and qualification must meet any applicable requirements of NFPA 805, Chapter 3. Having identified the required fire protection systems and features, the licensee selects either a deterministic or performance-based approach to demonstrate that the performance criteria are satisfied. This process satisfies the GDC 3 requirement to design and locate SSCs important to safety to minimize the probability and effects of fires and explosions."*

The new rule provides actions that may be taken to establish compliance with 10 CFR 50.48(a), which requires each operating nuclear power plant to have a fire protection program plan that satisfies GDC 3, as well as specific requirements in that section. The transition process described in 10 CFR 50.48(c)(3)(ii) provides, in pertinent parts, that a licensee intending to adopt the new rule must, among other things, "modify the fire protection plan required by paragraph (a) of that section to reflect the licensee's decision to comply with NFPA 805." Therefore, to the extent that the contents of the existing fire protection program plan required by 10 CFR 50.48(a) are

inconsistent with NFPA 805, the fire protection program plan must be modified to achieve compliance with the requirements in NFPA 805. All other requirements of 10 CFR 50.48(a) and GDC 3 have corresponding requirements in NFPA 805.

A comparison of the current requirements in Appendix R with the comparable requirements in Section 3 of NFPA 805 shows that the two sets of requirements are consistent in many respects. This was further clarified in FAQ 07-0032, 10 CFR 50.48(a) and GDC 3 clarification (ML081400292). The following tables provide a cross reference of fire protection regulations associated with the post-transition MNS fire protection program and applicable industry and MNS documents that address the topic.

10 CFR 50.48(a)

Table 5-1 10 CFR 50.48(a) – Applicability/Compliance Reference

10 CFR 50.48(a) Section(s)		Applicability/Compliance Reference
(1)	Each holder of an operating license issued under this part or a combined license issued under part 52 of this chapter must have a fire protection plan that satisfies Criterion 3 of appendix A to this part. This fire protection plan must:	See below
	(i) Describe the overall fire protection program for the facility;	NFPA 805 Section 3.2 NEI 04-02 Table B-1
	(ii) Identify the various positions within the licensee's organization that are responsible for the program;	NFPA 805 Section 3.2.2 NEI 04-02 Table B-1
	(iii) State the authorities that are delegated to each of these positions to implement those responsibilities; and	NFPA 805 Section 3.2.2 NEI 04-02 Table B-1
	(iv) Outline the plans for fire protection, fire detection and suppression capability, and limitation of fire damage.	NFPA 805 Section 2.7 and Chapters 3 and 4 NEI 04-02 B-1 and B-3 Tables
(2)	The plan must also describe specific features necessary to implement the program described in paragraph (a)(1) of this section such as:	See below
	(i) Administrative controls and personnel requirements for fire prevention and manual fire suppression activities;	NFPA 805 Sections 3.3.1 and 3.4 NEI 04-02 Table B-1
	(ii) Automatic and manually operated fire detection and suppression systems; and	NFPA 805 Sections 3.5 through 3.10 and Chapter 4 NEI 04-02 B-1 and B-3 Tables
	(iii) The means to limit fire damage to structures, systems, or components important to safety so that the capability to shut down the plant safely is ensured.	NFPA 805 Section 3.3 and Chapter 4 NEI 04-02 B-3 Table
(3)	The licensee shall retain the fire protection plan and each change to the plan as a record until the Commission terminates the reactor license. The licensee shall retain each superseded revision of the procedures for 3 years from the date it was superseded.	NFPA 805 Section 2.7.1.1 requires that documentation (Analyses, as defined by NFPA 805 2.4, performed to demonstrate compliance with this standard) be maintained for the life of the plant per Duke Energy Nuclear System Directive entitled "Records Management".

Table 5-1 10 CFR 50.48(a) – Applicability/Compliance Reference

10 CFR 50.48(a) Section(s)	Applicability/Compliance Reference
(4) Each applicant for a design approval, design certification, or manufacturing license under part 52 of this chapter must have a description and analysis of the fire protection design features for the standard plant necessary to demonstrate compliance with Criterion 3 of appendix A to this part.	Not applicable. MNS is licensed under 10 CFR 50.

General Design Criterion 3

Table 5-2 GDC 3 – Applicability/Compliance Reference

GDC 3, Fire Protection, Statement	Applicability/Compliance Reference
Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions.	NFPA 805 Chapters 3 and 4 NEI 04-02 B-1 and B-3 Tables
Noncombustible and heat resistant materials shall be used wherever practical throughout the unit, particularly in locations such as the containment and control room.	NFPA 805 Sections 3.3.2, 3.3.3, 3.3.4, 3.11.4 NEI 04-02 B-1 Table
Fire detection and fighting systems of appropriate capacity and capability shall be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety.	NFPA 805 Chapters 3 and 4 NEI 04-02 B-1 and B-3 Tables
Firefighting systems shall be designed to assure that their rupture or inadvertent operation does not significantly impair the safety capability of these structures, systems, and components	NFPA 805 Sections 3.4 through 3.10 and 4.2.1 NEI 04-02 Table B-3

10 CFR 50.48(c)

Table 5-3 10 CFR 50.48(c) – Applicability/Compliance Reference

10 CFR 50.48(c) Section(s)	Applicability/Compliance Reference
(1) *Approval of incorporation by reference.* National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition" (NFPA 805), which is referenced in this section, was approved for incorporation by reference by the Director of the Federal Register pursuant to 5 U.S.C. 552(a) and 1 CFR part 51.	General Information. NFPA 805 (2001 edition) is the edition used.
(2) Exceptions, modifications, and supplementation of NFPA 805. As used in this section, references to NFPA 805 are to the 2001 Edition, with the following exceptions, modifications, and supplementation:	General Information. NFPA 805 (2001 edition) is the edition used.
(i) *Life Safety Goal, Objectives, and Criteria.* The Life Safety Goal, Objectives, and Criteria of Chapter 1 are not endorsed.	The Life Safety Goal, Objectives, and Criteria of Chapter 1 of NFPA 805 are not part of the LAR.
(ii) *Plant Damage/Business Interruption Goal, Objectives, and Criteria.* The Plant Damage/Business Interruption Goal, Objectives, and Criteria of Chapter 1 are not endorsed.	The Plant Damage/Business Interruption Goal, Objectives, and Criteria of Chapter 1 of NFPA 805 are not part of the LAR.
(iii) *Use of feed-and-bleed.* In demonstrating compliance with the performance criteria of Sections 1.5.1(b) and (c), a high-pressure charging/injection pump coupled with the pressurizer power-operated relief valves (PORVs) as the sole fire-protected safe shutdown path for maintaining reactor coolant inventory, pressure control, and decay heat removal capability (i.e., feed-and-bleed) for pressurized-water reactors (PWRs) is not permitted.	Feed and bleed is not utilized as the sole fire-protected safe shutdown methodology.
(iv) Uncertainty analysis. An uncertainty analysis performed in accordance with Section 2.7.3.5 is not required to support deterministic approach calculations.	Uncertainty analysis was not performed for deterministic methodology.
(v) Existing cables. In lieu of installing cables meeting flame propagation tests as required by Section 3.3.5.3, a flame-retardant coating may be applied to the electric cables, or an automatic fixed fire suppression system may be installed to provide an equivalent level of protection. In addition, the italicized exception to Section 3.3.5.3 is not endorsed.	Electrical cable construction "complies" with a flame propagation test that was found acceptable to the NRC as documented in Attachment A.
(vi) Water supply and distribution. The italicized exception to Section 3.6.4 is not endorsed. Licensees who wish to use the exception to Section 3.6.4 must submit a request for a license amendment in accordance with paragraph (c)(2)(vii) of this section.	MNS "complies with previous NRC approval" as documented in Attachment A.

Table 5-3 10 CFR 50.48(c) – Applicability/Compliance Reference

10 CFR 50.48(c) Section(s)	Applicability/Compliance Reference
(vii) Performance-based methods. Notwithstanding the prohibition in Section 3.1 against the use of performance-based methods, the fire protection program elements and minimum design requirements of Chapter 3 may be subject to the performance-based methods permitted elsewhere in the standard. Licensees who wish to use performance-based methods for these fire protection program elements and minimum design requirements shall submit a request in the form of an application for license amendment under § 50.90. The Director of the Office of Nuclear Reactor Regulation, or a designee of the Director, may approve the application if the Director or designee determines that the performance-based approach; (A) Satisfies the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release; (B) Maintains safety margins; and (C) Maintains fire protection defense-in-depth (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).	The use of performance-based methods for NFPA 805 Chapter 3 is requested. See Attachment L.
(3) *Compliance with NFPA 805.*	See below
(i) A licensee may maintain a fire protection program that complies with NFPA 805 as an alternative to complying with paragraph (b) of this section for plants licensed to operate before January 1, 1979, or the fire protection license conditions for plants licensed to operate after January 1, 1979. The licensee shall submit a request to comply with NFPA 805 in the form of an application for license amendment under § 50.90. The application must identify any orders and license conditions that must be revised or superseded, and contain any necessary revisions to the plant's technical specifications and the bases thereof. The Director of the Office of Nuclear Reactor Regulation, or a designee of the Director, may approve the application if the Director or designee determines that the licensee has identified orders, license conditions, and the technical specifications that must be revised or superseded, and that any necessary revisions are adequate. Any approval by the Director or the designee must be in the form of a license amendment approving the use of NFPA 805 together with any necessary revisions to the technical specifications.	The LAR was submitted in accordance with 10 CFR 50.90. The LAR included applicable license conditions, orders, technical specifications/bases that needed to be revised and/or superseded.
(ii) The licensee shall complete its implementation of the methodology in Chapter 2 of NFPA 805 (including all required evaluations and analyses) and, upon completion, modify the fire protection plan required by paragraph (a) of this section to reflect the licensee's decision to comply with NFPA 805, before changing its fire protection program or nuclear power plant as permitted by NFPA 805.	The LAR and transition report summarize the evaluations and analyses performed in accordance with Chapter 2 of NFPA 805.
(4) Risk-informed or performance-based alternatives to compliance with NFPA 805. A licensee may submit a request to use risk-informed or performance-based alternatives to compliance with NFPA 805. The request must be in the form of an application for license amendment under § 50.90 of this chapter. The Director of the Office of Nuclear Reactor Regulation, or designee of the Director, may approve the application if the Director or designee determines that the proposed alternatives: (i) Satisfy the performance goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release; (ii) Maintain safety margins; and (iii) Maintain fire protection defense-in-depth (fire prevention, fire detection, fire suppression, mitigation, and post-fire safe shutdown capability).	No risk-informed or performance-based alternatives to compliance with NFPA 805 (per 10 CFR 50.48(c)(4)) were utilized.

5.2 Regulatory Topics

5.2.1 License Condition Changes

The current MNS Unit 1 and Unit 2 fire protection license conditions 2.C.(4) are being replaced with the Standard License Condition based upon Regulatory Position 3.1 of RG 1.205, as shown in Attachment M.

5.2.2 Technical Specifications

MNS conducted a review of the Technical Specifications (TS) to determine which TS are required to be revised, deleted, or superseded. MNS determined that no revisions to the TS are required for the MNS adoption of the new fire protection licensing basis.

5.2.3 Orders and Exemptions

A review was conducted of the MNS docketed correspondence to determine if there were any orders or exemptions that needed to be superseded or revised. A review was also performed to ensure that compliance with the physical protection requirements, security orders, and adherence to those commitments applicable to the plant are maintained. A discussion of affected orders and exemptions is included in Attachment O.

5.3 Regulatory Evaluations

5.3.1 No Significant Hazards Consideration

A written evaluation of the significant hazards consideration of a proposed license amendment is required by 10 CFR 50.92. According to 10 CFR 50.92, a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

- Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- Involve a significant reduction in a margin of safety.

This evaluation is contained in Attachment Q.

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. MNS has evaluated the proposed amendment and determined that it involves no significant hazards consideration.

5.3.2 Environmental Consideration

Pursuant to 10 CFR 51.22(b), an evaluation of the LAR has been performed to determine whether it meets the criteria for categorical exclusion set forth in 10 CFR 51.22(c). That evaluation is discussed in Attachment R. The evaluation confirms that

this LAR meets the criteria set forth in 10 CFR 51.22(c)(9) for categorical exclusion from the need for an environmental impact assessment or statement.

5.4 Revision to the UFSAR

After the approval of the LAR, in accordance with 10 CFR 50.71(e), the MNS UFSAR will be revised. The format and content will be consistent with NEI 04-02 FAQ 12-0062. See implementation item 2 in Table S-3 of Attachment S.

5.5 Transition Implementation Schedule

The following schedule for transitioning MNS to the new fire protection licensing basis requires NRC approval of the LAR in accordance with the following schedule:

- Implementation of new NFPA 805 fire protection program to include procedure changes, process updates, and training to affected plant personnel. This will occur by July 31, 2016.
- Tables S-1 and S-2 of Attachment S provide a listing of plant modifications associated with the transition to NFPA 805. Table S-1 contains the list of completed modifications associated with NFPA 805. Table S-2 contains the list of committed modifications associated with NFPA 805. MNS will complete implementation of the modifications as specified in Table S-2. Appropriate compensatory measures will be maintained until modifications are complete.

6.0 REFERENCES

The following references were used in the development of the LAR. Additional references are in the NEI 04-02 Tables in the various Attachments.

1. NEI 00-01, Guidance for Post-Fire Safe Shutdown Circuit Analysis, Revision 1, January 2005.
2. NEI 00-01, Guidance for Post-Fire Safe Shutdown Circuit Analysis, Revision 2, May 2009.
3. NEI 04-02, Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program under 10 CFR 50.48(c), Revision 2, April 2008.
4. NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition.
5. NRC Enforcement Policy, Policy Statement: Revision, Federal Register, Vol. 69, No. 115, June 16, 2004, pp. 33684-33685.
6. NRC Generic Letter 86-10, Supplement 1, Fire Endurance Test Acceptance Criteria for Fire Barrier Systems Used to Separate Redundant Safe Shutdown Trains Within the Same Fire Area, March 25, 1994.
7. NRC Inspection Manual IM0609 Appendix G Attachment 2, Phase 2 Significance Determination Process Template for PWR During Shutdown, February 28, 2005.
8. NRC Regulatory Issue Summary 2007-19; Communicating Clarifications of Staff Positions in RG 1.205 Concerning Issues Identified During Pilot Application of NFPA Std 805, August 20, 2007 (ML0611660105).
9. NUMARC 91-06, Guidelines for Industry Actions to Assess Shutdown Management.
10. NUREG/CR-6850, EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities, April 2005.
11. Regulatory Guide 1.174, An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis, Revision 1 – November 2002.
12. Regulatory Guide 1.200, An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities, Revision 2 – March 2009.
13. Regulatory Guide 1.205, Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants, Revision 1, December 2009.
14. RIS 2007-19, Process for Communicating Clarifications of Staff Positions Provided in Regulatory Guide 1.205 Concerning Issues Identified During the Pilot Application of National Fire Protection Association Standard 805, August 20, 2007.
15. Voluntary Fire Protection Requirement for Light-Water Reactors; Adoption of NFPA 805 as a Risk-Informed, Performance-Based Alternative, Final Rule, Federal Register, Vol. 69, No. 115, June 16, 2004, pp. 33536-33551.

16. Letter from Duke Power to NRC dated February 28, 2005, Letter of Intent to Adopt NFPA 805 Performance-Based Standard for Fire Protection for Light Water Reactor Generating Plants, 2001 Edition - (ML050670305).

17. Letter from NRC to Duke Power dated June 8, 2005, NRC Response To Duke's Letter Of Intent To Adopt 10 CFR 50.48(c) (NFPA 805 Rule) - ML051080005.

18. Letter from Duke Energy to NRC dated April18, 2006, Letter of Intent to Start the Transition to NFPA 805 Performance-Based Standard for Fire Protection for Light Water Reactor Generating Plants, 2001 Edition - ML061150375.

19. Letter from NRC to Duke Power dated September 26, 2006, NRC Response to Letter of Intent to Adopt Title 10 of the Code of Federal Regulations, Part 50, Section 50.48(c) for McGuire Nuclear Station, Units 1 and 2 – ML062700009.

20. Letter from Duke Energy to NRC dated January 16, 2009, Request for Extension of Enforcement Discretion and Revised Submittal Schedule for 10 CFR 50.48(c) License Amendment Request- ML090350062.

21. Letter from NRC to Duke Energy dated June 3, 2009, McGuire Nuclear Station, Units 1 And 2 - Evaluation Of The Request For An Extension Of Enforcement Discretion In Accordance With The Interim Enforcement Policy For Fire Protection Issues During Transition To National Fire Protection Association Standard NFPA 805 (TAC NOS. ME0949 and ME0950) - ML091240640.

22. Letter from Duke Energy to NRC dated June 23, 2011, Request for Extension of Enforcement Discretion and Commitment to Submittal Date for 10 CFR 50.48(c) License Amendment Request - ML11188A175.

23. Letter from NRC to Duke Energy dated July 28, 2011, McGuire Nuclear Station, Units 1 and 2 - Commitment To Submit A License Amendment Request To Transition To Title 10 Of The Code Of *Federal Regulations* (10 CFR), PART 50, Section 50.48(c), National Fire Protection Association Standard NFPA 805, And Request To Extend Enforcement Discretion (TAC NOS. ME6606 AND ME6607) – ML11201A193.

24. Letter from Duke Power to NRC dated September 1, 1977, Amendment 44 to Application for Licenses for the McGuire Nuclear Station.

25. Letter from NRC to Duke Power dated March 1, 1978, Issuance of Safety Evaluation Report (William B McGuire Nuclear Station, Units 1 and 2).

26. Letter from NRC to Duke Power dated March 1, 1979, Issuance of Supplement No. 2 to the Safety Evaluation Report (McGuire Nuclear Station, Unit 1 and 2).

27. Safety Evaluation Report related to McGuire Nuclear Station, Units 1 and 2, Supplement 5, dated April 1981.

28. Safety Evaluation Report related to McGuire Nuclear Station, Units 1 and 2, Supplement 6, dated February 1983.

29. Letter from Duke Power to NRC dated May 6, 1983, McGuire Nuclear Station, Local Fire Alarms.

30. Letter from Duke Power to NRC dated February 20, 1984, McGuire Nuclear Station, Emergency Lights.

31. Letter from Duke Power to NRC dated August 3, 1984, McGuire Nuclear Station, Fire Protection Deviations.

32. Letter from NRC to Duke Power dated April 16, 1984, Issuance of Amendment No. 31 to Facility Operating License NPF-9 and Amendment No. 12 to Facility Operating License NPF – McGuire Nuclear Station, Units 1 and 2, ML013170467.

33. Letter from NRC to Duke Power dated May 15, 1989, Fire Protection Deviations, McGuire Nuclear Station, Units 1 and 2 (TACs 55615 and 55616) – ML091310136.

34. Letter from NRC to Duke Energy dated January 13, 2003, McGuire Nuclear Station, Unit 1 – Request for Deviation from Fire Protection Program Incorporating Requirements of Appendix R to Part 50 of Title 10 of the Code of Federal Regulations (TAC No. MB6528) – ML030130060.

35. Letter from Duke Energy to NRC dated October 3, 2002, McGuire Nuclear Station, Unit 1, Docket No. 50-369, 10 CFR 50 Appendix R Deviation Request, ML022910265.

36. Letter from Duke Energy to NRC dated November 21, 2002, McGuire Nuclear Station, Unit 1, Docket No. 50-369, Supplemental Information, TAC No. MB6528, ML023370519.

37. Letter from NRC to Nuclear Energy Institute dated June 21, 2012, Recent Fire PRA Methods Review Panel Deceuisions and EPRI 1022993, "Evaluation of Peak Heat Release Rates in Electrical Cabinet Fires" – ML12171A583.
IN 92-18, Potential for Loss of Remote Shutdown Capability During a Control Room Fire, February 28, 1992.

38. MCC-1435.00-00-0019, NFPA 805 Transition - Radiological Release input to LAR Attachment E, Revision 2.

39. MCC-1435.00-00-0021, NFPA 805 Transition NEI 04-02 B-2 Table – Nuclear Safety Capability Assessment – Methodology Review, Revision 4.

40. MCC-1435.00-00-0023, NFPA 805 Transition Expert Panel Report for Addressing Potential McGuire Multiple Spurious Operations, Revision 1.

41. MCC-1435.00-00-0024, NFPA 805 Transition – NEI 04-02 B-3 Table – Fire Area Transition, Revision 4.

42. MCC 1435.00-00-0026, NFPA 805 Transition Existing Engineering Equivalency Evaluations, Revision 2.

43. MCC-1435.00-00-0027, NFPA 805 Transition Licensing Action Review, Revision 2.

44. MCC-1435.00-00-0028, NFPA 805 Transition B-1 Table/Report, Revision 5.

45. MCC-1435.00-00-0041, NFPA 805 Transition Risk-Informed, Performance-Based Fire Risk Evaluations, Revision 2.

46. MCC-1435.00-00-0043, NFPA 805 Transition – NPO, Revision 0.

47. MCC-1435.00-00-0061, Power Block Definition, Revision 1.
48. MCC-1435.00-00-0067, Fire Protection Systems and Features Calculation, Revision 0.
49. MCC-1535.00-00-0101, MNS Fire PRA Ignition Source Frequency Calculation, Revision 1.
50. MCC-1535.00-00-0102, MNS Fire PRA Component Selection, Revision 0.
51. MCC-1535.00-00-0103, MNS Fire PRA Cable Selection, Revision 1.
52. MCC-1535.00-00-0104, MNS FPRA Scenario Report, Revision 2.
53. MCC-1535.00-00-0106, Fire PRA Summary Report, Revision 4.
54. MCC-1535.00-00-0158, MNS Application Calculation, Revision 1.
55. MCC-1535.00-00-0169, MNS Fire PRA Input Calc to FRE, Revision 2.
56. MCC-1535.00-00-0175, Attachment U – Internal Events PRA Quality, Revision 1.

ATTACHMENTS

A. NEI 04-02 Table B-1 Transition of Fundamental Fire Protection Program & Design Elements

42 Pages Attached

Attachment A
NEI 04-02 Table B-1 Transition of Fundamental Fire Protection Program & Design Elements

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.1 General	3.1* General. This chapter contains the fundamental elements of the fire protection program and specifies the minimum design requirements for fire protection systems and features. These fire protection program elements and minimum design requirements shall not be subject to the performance-based methods permitted elsewhere in this standard. Previously approved alternatives from the fundamental protection program attributes of this chapter by the AHJ take precedence over the requirements contained herein.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.2 Fire Protection Plan	N/A	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.2.1 Intent	3.2.1 Intent. A site-wide fire protection plan shall be established. This plan shall document management policy and program direction and shall define the responsibilities of those individuals responsible for the plan's implementation. This section establishes the criteria for an integrated combination of components, procedures, and personnel to implement all fire protection program activities	Comply	A site-wide Fire Protection Program has been established and is documented in the Fire Protection Program Design Basis Specification.
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App. A.1; Section A] - Design Basis Specification for Fire Protection		
3.2.2 Management Policy Direction and Responsibility.	3.2.2* Management Policy Direction and Responsibility. A policy document shall be prepared that defines management authority and responsibilities and establishes the general policy for the site fire protection program.	Comply	A policy document has been developed to define management authority and responsibilities and is documented in the Design Basis Specification for the Plant Fire Protection
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App A.1; Section A.1] - Design Basis Specification for Fire Protection		
3.2.2.1 [Management Policy on Senior Management]	3.2.2.1* The policy document shall designate the senior management position with immediate authority and responsibility for the fire protection program.	Comply	The Site Vice President is documented as responsible for the implementation of the fire protection program.
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App A.1; Section A.1] - Design Basis Specification for Fire Protection		
3.2.2.2 [Management Policy on Daily Administration]	3.2.2.2* The policy document shall designate a position responsible for the daily administration and coordination of the fire protection program and its implementation.	Comply	The Fire Protection Engineer is responsible for the daily administration and coordination of the fire protection program.
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App A.1; Section A.1] - Design Basis Specification for Fire Protection		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.2.2.3 [Management Policy on Interfaces]	3.2.2.3* The policy document shall define the fire protection interfaces with other organizations and assign responsibilities for the coordination of activities. In addition, this policy document shall identify the various plant positions having the authority for implementing the various areas of the fire protection program.	Comply	The interfaces between the fire protection program and other organizations and the assignment of responsibilities for station personnel are included in various station documents. Station documentation identifies various plant positions with the authority having jurisdiction for implanting various areas of the fire protection program.
References	**Document ID**		
	MCS-1465.00-00-0008 Rev. 14 [App A.1; Section A.1] - Design Basis Specification for Fire Protection		
	MNS FP ESD Rev. 5 [Section 4] - MNS Fire Protection Program Engineering Support Document		
	NSD-112 Rev. 11 [Section 112.4] - Fire Brigade Organization, Training & Responsibilities		
	NSD-316 Rev. 13 [Section 316.4] - Fire Protection Impairment and Surveillance		
3.2.2.4 [Management Policy on AHJ]	3.2.2.4* The policy document shall identify the appropriate AHJ for the various areas of the fire protection program.	Comply	The NRC is the AHJ for fire protection changes requiring approval. The NRC is notified of changes to the fire protection program in accordance with NSD-320. NSD-320 screens changes to the fire protection program to determine if NRC approval is required. Implementation Item: The Design Basis Specification for Fire Protection, which is the primary fire protection program policy document, will be updated to include the statement that the NRC is the AHJ for fire protection changes requiring approval. See Implementation Item in Table S-3 of Attachment S.
References	**Document ID**		
	NSD-320 Rev. 4 [Sections 320.1, 320.3] - Guidance for Performing Licensing Review of Proposed Changes to the Fire Protection Program		
3.2.3 Procedures	3.2.3* Procedures. Procedures shall be established for implementation of the fire protection program.In addition to procedures that could be required by other sections of the standard, the procedures to accomplish the following shall be established	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.2.3 Procedures (1)	3.2.3 (1) * Inspection, testing, and maintenance for fire protection systems and features credited by the fire protection program	Comply	Procedures have been established or implemented for inspection, testing, and maintenance of the fire protection systems and features. The Fire Protection Engineering Support Document (ESD) contains an uncontrolled list of the fire protection related inspection and maintenance procedures.
References	**Document ID**		
	MNS FP ESD Rev. 5 [Att. C] - MNS Fire Protection Program Engineering Support Document		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
		Submit for NRC Approval	Surveillance frequencies may be modified in accordance with the methodology in EPRI Report TR1006756, "Fire Protection Equipment Surveillance Optimization and Maintenance Guide." MNS requests formal NRC approval of this methodology. See Attachment L of the License Amendment Request for further details on the request for NRC approval of the EPRI Surveillance Frequency Optimization and Maintenance Guide. Implementation Item: Appropriate fire protection program document(s) will be updated to provide a requirement that if a plant elects to implement the methodologies in EPRI Report TR1006756, that the methodologies will be implemented in their entirety as they pertain to the fire protection systems or features being evaluated. See Implementation Item in Table S-3 of Attachment S.
3.2.3 Procedures (2)	3.2.3 (2) * Compensatory actions implemented when fire protection systems and other systems credited by the fire protection program and this standard cannot perform their intended function and limits on impairment duration	Comply	A fire protection impairment and surveillance procedure has been established to identify the compensatory actions implemented when fire protection features cannot perform their intended function.
References	**Document ID** NSD-316 Rev. 13 - Fire Protection Impairment and Surveillance		
3.2.3 Procedures (3)	3.2.3 (3) * Reviews of fire protection program — related performance and trends	Comply	Procedures have been established for fire protection program reviews. Implementation Item: The monitoring program required by NFPA 805 will include a process that monitors and trends the fire protection systems and features based on specific goals established to measure availability and reliability. See Implementation Item in Table S-3 of Attachment S.
References	**Document ID** EDM-201 Rev. 15 - Risk Category Scoping, Health Grouping and ER Strategy EDM-203 Rev. 4 - Equipment Reliability Health Monitoring, Assessing, Reporting and Action Planning		
3.2.3 Procedures (4)	3.2.3 (4) Reviews of physical plant modifications and procedure changes for impact on the fire protection program	Comply	Procedures have been established for plant modification reviews and procedure revisions for impact on the fire protection program.
References	**Document ID** EDM-601 Rev. 14 [App. N] - Engineering Change Manual NSD-228 Rev. 10 [App. E] - Applicability Determination NSD-301 Rev. 41 [Sections 301.6.2.1.3 and 6.2.4.2] - Engineering Change Program NSD-320 Rev. 4 - Guidance for Performing Licensing Review of Proposed Changes to the Fire Protection Program		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.2.3 Procedures (5)	3.2.3 (5) Long-term maintenance and configuration of the fire protection program	Comply	Procedures have been established for the long term maintenance and configuration of the fire protection program.
References	**Document ID**		
	MCS-1274.00-00-0016 Rev. 2 [Section 4.13] - McGuire License Renewal Commitments		
	NSD-106 Rev. 7 [App. A] - Configuration Management		
	NSD-228 Rev. 10 [App. E] - Applicability Determination		
	NSD-320 Rev. 4 - Guidance for Performing Licensing Review of Proposed Changes to the Fire Protection Program		
3.2.3 Procedures (6)	3.2.3 (6) Emergency response procedures for the plant industrial fire brigade.	Comply	Emergency response procedures for the plant fire brigade have been established.
References	**Document ID**		
	McGuire Nuclear Station Fire Strategies -		
	NSD-112 Rev. 11 [Section 112.2] - Fire Brigade Organization, Training & Responsibilities		
	RP/0/A/5700/025 Rev. 19 - Fire Brigade Response		
3.3 Prevention	3.3 Prevention. A fire prevention program with the goal of preventing a fire from starting shall be established, documented, and implemented as part of the fire protection program. The two basic components of the fire prevention program shall consist of both of the following: (1) Prevention of fires and fire spread by controls on operational activities (2) Design controls that restrict the use of combustible materials The design control requirements listed in the remainder of this section shall be provided as described.	Comply	The MNS fire prevention program is described in the Fire Protection Program Design Basis Specification. The Fire Protection Program Design Basis Specification identifies activities for fire prevention via controls on operational activities and design controls for use of combustible materials. The objectives are implemented by various station directives and other documents as described in subsequent NFPA 805 sections.
References	**Document ID**		
	MCS-1465.00-00-0008 Rev. 14 [App A.1; Section B] - Design Basis Specification for Fire Protection		
	NSD-104 Rev. 33 - Materiel Condition/Housekeeping, Foreign Material Exclusion and Seismic Concerns		
	NSD-313 Rev. 13 - Control of Flammable and Combustible Materials		
	NSD-314 Rev. 14 - Hot Work Authorization and Portable Heater Control		
	NSD-315 Rev. 5 - Temporary Structures		
	NSD-316 Rev. 13 - Fire Protection Impairment and Surveillance		
3.3.1 Fire Prevention for Operational Activities.	3.3.1 Fire Prevention for Operational Activities. The fire prevention program activities shall consist of the necessary elements to address the control of ignition sources and the use of transient combustible materials during all aspects of plant operations. The fire prevention program shall focus on the human and programmatic elements necessary to prevent fires from starting or, should a fire start, to keep the fire as small as possible.	Comply	Fire prevention program, activities for control of ignition sources and transient combustibles include training, inspections, and administrative controls have been established. The fire prevention objectives are implemented by various station directives and other documents as described in subsequent sections.

Attachment A
NEI 04-02 Table B-1 Transition of Fundamental Fire Protection Program & Design Elements

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
References	**Document ID**		
	Duke PAT Rev. 08/01/2012 - Duke Energy - Plant Access Training		
	NSD-104 Rev. 33 - Materiel Condition/Housekeeping, Foreign Material Exclusion and Seismic Concerns		
	NSD-313 Rev. 13 - Control of Flammable and Combustible Materials		
	NSD-314 Rev. 14 - Hot Work Authorization and Portable Heater Control		
	NSD-315 Rev. 5 - Temporary Structures		
	NSD-316 Rev. 13 - Fire Protection Impairment and Surveillance		
3.3.1.1 General Fire Prevention Activities	3.3.1.1 General Fire Prevention Activities. The fire prevention activities shall include but not be limited to the following program elements:	N/A	N/A - Section Heading; see sub-sections for any specific compliance statements. Note: Duke Energy has developed multiple directives and work practices to address fire prevention. These directives include but are not limited to the programmatic elements provided in NFPA 805 Section 3.3.1.1. Upon review of the elements listed below, MNS believes that the NFPA 805 code requirements are satisfied and no additional elements were evaluated.
3.3.1.1 General Fire Prevention Activities (1)	3.3.1.1 (1) Training on fire safety information for all employees and contractors including, as a minimum, familiarization with plant fire prevention procedures, fire reporting, and plant emergency alarms.	Comply	The prevention of fires and fire spread are managed through administrative controls and continual training of personnel.
References	**Document ID**		
	Duke PAT Rev. 08/01/2012 [Page 16, 67, 116] - Duke Energy - Plant Access Training		
	NSD-313 Rev. 13 - Control of Flammable and Combustible Materials		
	NSD-314 Rev. 14 - Hot Work Authorization and Portable Heater Control		
3.3.1.1 General Fire Prevention Activities (2)	3.3.1.1 (2) * Documented plant inspections including provisions for corrective actions for conditions where unanalyzed fire hazards are identified.	Comply	Plant inspections are documented and provisions for implementing corrective actions, where unidentified fire hazards are identified, are tracked through the station's Corrective Action Process.
References	**Document ID**		
	NSD-208 Rev. 38 - Problem Investigation Program (PIP)		
3.3.1.1 General Fire Prevention Activities (3)	3.3.1.1 (3) * Administrative controls addressing the review of plant modifications and maintenance to ensure that both fire hazards and the impact on plant fire protection systems and features are minimized.	Comply	All plant modifications and changes are screened for impact on the plant fire protection program during both the design phase and the implementation phase. Administrative controls are provided in various directives.
References	**Document ID**		
	EDM-601 Rev. 14 [Att. N] - Engineering Change Manual		
	NSD-228 Rev. 10 - Applicability Determination		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
	NSD-301 Rev. 41 - Engineering Change Program NSD-315 Rev. 5 - Temporary Structures NSD-320 Rev. 4 - Guidance for Performing Licensing Review of Proposed Changes to the Fire Protection Program		
3.3.1.2 Control of Combustible Materials	3.3.1.2* Control of Combustible Materials. Procedures for the control of general housekeeping practices and the control of transient combustibles shall be developed and implemented. These procedures shall include but not be limited to the following program elements:	N/A	N/A - Section Heading; see sub-sections for any specific compliance statements. Note: Duke Energy has developed multiple directives and work practices to address fire prevention and control of combustible materials. These directives include but are not limited to the programmatic elements provided in NFPA 805 Section 3.3.1.2. Upon review of the elements listed below, MNS believes that the NFPA 805 code requirements are satisfied and no additional elements were evaluated.
3.3.1.2 Control of Combustible Materials (1)	3.3.1.2 (1) * Wood used within the power block shall be listed pressure-impregnated or coated with a listed fire-retardant application. Exception: Cribbing timbers 6 in. by 6 in. (15.2 cm by 15.2 cm) or larger shall not be required to be fire-retardant treated.	Comply	Wood is required to be flame retardant except where allowed by the exception to this section. Implementation Item: Revise station procedures/directives to comply with NFPA 805 Section 3.3.1.2(1). See Implementation Item in Table S-3 of Attachment S.
References	**Document ID**		
	NSD-313 Rev. 13 [Section 313.5.1] - Control of Flammable and Combustible Materials		
3.3.1.2 Control of Combustible Materials (2)	3.3.1.2 (2) Plastic sheeting materials used in the power block shall be fire-retardant types that have passed NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films, large-scale tests, or equivalent.	Comply	Specific administrative directives have been developed for the control of combustible materials which require plastic sheeting materials used in the power block shall be fire-retardant types that have passed NFPA 701, or equivalent.
References	**Document ID**		
	NSD-313 Rev. 13 [Section 313.5.1] - Control of Flammable and Combustible Materials		
3.3.1.2 Control of Combustible Materials (3)	3.3.1.2 (3) Waste, debris, scrap, packing materials, or other combustibles shall be removed from an area immediately following the completion of work or at the end of the shift, whichever comes first.	Comply	Specific administrative directives have been developed for the control of combustible materials including the removal of all unnecessary waste, debris, scrap, packaging materials, and other combustibles at the end of each shift.
References	**Document ID**		
	NSD-313 Rev. 13 [Section 313.5.1] - Control of Flammable and Combustible Materials		
3.3.1.2 Control of Combustible Materials (4)	3.3.1.2 (4) * Combustible storage or staging areas shall be designated, and limits shall be established on the types and quantities of stored materials.	Comply	Specific administrative directives have been developed for the control of combustible materials including limits on the types and quantities of stored materials.
References	**Document ID**		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
	NSD-313 Rev. 13 [Section 313.5, App. A, Supplement S.2] - Control of Flammable and Combustible Materials		
3.3.1.2 Control of Combustible Materials (5)	3.3.1.2 (5) * Controls on use and storage of flammable and combustible liquids shall be in accordance with NFPA 30, Flammable and Combustible Liquids Code, or other applicable NFPA standards.	Comply	Specific administrative directives and procedures have been developed for the use and storage of flammable and combustible liquids in accordance with NFPA 30 guidance. No other NFPA standards were determined to be applicable based on the guidance in FAQ 06-0020.
References	**Document ID**		
	Duke Energy SWP Manual Rev. 03/13 [Page 141] - Safe Work Practices 2013		
	NEWP 7.2 Rev. 1 - Storing Chemicals		
	NSD-313 Rev. 13 [Section 313.5.1] - Control of Flammable and Combustible Materials		
3.3.1.2 Control of Combustible Materials (6)	3.3.1.2 (6) * Controls on use and storage of flammable gases shall be in accordance with applicable NFPA standards.	Comply	Specific administrative directives and procedures have been developed for the use and storage of flammable gases in accordance with NFPA 55. No other NFPA standards were determined to be applicable based on the guidance in FAQ 06-0020.
References	**Document ID**		
	Duke Energy SWP Manual Rev. 03/13 [Page 21] - Safe Work Practices 2013		
	NEWP 7.2 Rev. 1 - Storing Chemicals		
	NSD-313 Rev. 13 [Section 313.5.1] - Control of Flammable and Combustible Materials		
3.3.1.3 Control of Ignition Sources	3.3.1.3 Control of Ignition Sources	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.3.1.3.1 [Control of Ignition Sources Code Requirements]	3.3.1.3.1* A hot work safety procedure shall be developed, implemented, and periodically updated as necessary in accordance with NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, and NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations.	Comply	Hot work is controlled through an administrative directive in accordance with NFPA 51B." The directive is updated on an "as needed" basis. NFPA 241 is addressed through compliance with NFPA 51B. NFPA 241, 2000 edition, as referenced by NFPA 805-2001 ed., Section 5.1.1, with respect to hot work, states "Responsibility for hot work operations and fire prevention precautions , including permits and fire watches, shall be in accordance with NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work."
References	**Document ID**		
	NSD-314 Rev. 14 - Hot Work Authorization and Portable Heater Control		
3.3.1.3.2 [Control of Ignition Sources on Smoking Limitations]	3.3.1.3.2 Smoking and other possible sources of ignition shall be restricted to properly designated and supervised safe areas of the plant.	Comply	Smoking is restricted to approved locations and other sources of ignition are controlled through administrative directives and as directed in the General Plant Access Training program.

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
References	Document ID Duke PAT Rev. 08/01/2012 [Page 6] - Duke Energy - Plant Access Training NSD-104 Rev. 33 [Section 104.5.3] - Materiel Condition/Housekeeping, Foreign Material Exclusion and Seismic Concerns		
3.3.1.3.3 [Control of Ignition Sources for Leak Testing]	3.3.1.3.3 Open flames or combustion-generated smoke shall not be permitted for leak or air flow testing	Comply	Open flame or combustion-generated smoke is prohibited for use in leak and air testing.
References	Document ID MCS-1465.00-00-0008 Rev. 14 [App A.1; Section B.3.6] - Design Basis Specification for Fire Protection		
3.3.1.3.4 [Control of Ignition Sources on Portable Heaters]	3.3.1.3.4* Plant administrative procedure shall control the use of portable electrical heaters in the plant. Portable fuel-fired heaters shall not be permitted in plant areas containing equipment important to nuclear safety or where there is a potential for radiological releases resulting from a fire.	Comply	Portable electric heaters are controlled through administrative directives. Portable fuel-fired heaters are not permitted in the power block.
References	Document ID NSD-314 Rev. 14 [Section 314.6] - Hot Work Authorization and Portable Heater Control		
3.3.2 Structural.	3.3.2 Structural. Walls, floors, and components required to maintain structural integrity shall be of noncombustible construction, as defined in NFPA 220, Standard on Types of Building Construction.	Comply	Power block buildings are constructed of non-combustible materials, primarily reinforced concrete or concrete block with structural steel framing.
References	Document ID MCS-1465.00-00-0008 Rev. 14 [App. A.2] - Design Basis Specification for Fire Protection		
3.3.3 Interior Finishes	3.3.3 Interior Finishes. Interior wall or ceiling finish classification shall be in accordance with NFPA 101®, Life Safety Code®, requirements for Class A materials. Interior floor finishes shall be in accordance with NFPA 101 requirements for Class I interior floor finishes.	Comply	The fire protection design basis specification states that interior wall and structural components, thermal insulation materials, radiation shielding materials, and sound proofing materials have a flame spread rating of 25 or less, as tested in accordance with American Society for Testing and Materials (ASTM) E-84. Interior finishes have flame spread of 25 or less and smoke and fuel contribution of 50 or less in its use configuration. NFPA 101 defines Class A finishes are non-combustible and are defined as those that have a flame spread index of less than or equal to 25 and a smoke developed index of less than or equal to 450. NSD-318 includes the requirement that Service Level I, II, and IV coatings used on interior floors, walls, and ceilings in "power block" buildings are required to meet the requirements of NFPA 805, Section 3.3.3. Implementation Item: Update station documentation to indicate

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
			requirements for interior floor finish requirements. See Implementation Item 18 in Table S-3 of Attachment S.
References	Document ID		
	MCS-1206.10-00-0000 Rev. 9 [Section 5] - Conventional Heat Insulation		
	MCS-1465.00-00-0008 Rev. 14 [App A.1; Section D.1.d] - Design Basis Specification for Fire Protection		
	NSD-318 Rev. 5 [Section 318.7] - Coatings Program		
3.3.4 Insulation Materials	3.3.4 Insulation Materials. Thermal insulation materials, radiation shielding materials, ventilation duct materials, and soundproofing materials shall be noncombustible or limited combustible.	Comply	Thermal insulation materials, radiation shielding materials, ventilation duct materials, and sound proofing materials are non-combustible or limited combustible. Any new insulation materials would require a screening determination in accordance with NSD-301, "Engineering Change Program", and EDM-601, "Engineering Directives Manual." Part of the screening process is an evaluation of the potential effects on the Fire Protection Program which would require the use of noncombustible or limited combustible materials.
References	Document ID		
	EDM-601 Rev. 14 - Engineering Change Manual		
	MCS-1206.10-00-0000 Rev. 9 - Conventional Heat Insulation		
	MCS-1465.00-00-0008 Rev. 14 [App A.1; Section D.1.d] - Design Basis Specification for Fire Protection		
	NSD-301 Rev. 41 - Engineering Change Program		
3.3.5 Electrical.	N/A	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.3.5.1 [Electrical Wiring Above Suspended Ceiling Limitations]	3.3.5.1 Wiring above suspended ceiling shall be kept to a minimum. Where installed, electrical wiring shall be listed for plenum use, routed in armored cable, routed in metallic conduit, or routed in cable trays with solid metal top and bottom covers.	Submit for NRC Approval	Combustibles in concealed spaces are minimized. Wiring above some suspended ceilings may not meet this requirement. See Attachment L of the License Amendment Request for further details on the request for NRC approval for wiring above suspended ceilings. Implementation Item: Appropriate station documentation will be updated to include the requirements for installation of cable above suspended ceilings. See Implementation Item in Table S-3 of Attachment S.
References	Document ID		
	1978-03-22 Duke Letter - Duke Response to 3-2-1978 RAI		
	MCS-1465.00-00-0008 Rev. 14 [App A.1; Section D.1.f] - Design Basis Specification for Fire Protection		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.3.5.2 [Electrical Raceway Construction Limits]	3.3.5.2 Only metal tray and metal conduits shall be used for electrical raceways. Thin wall metallic tubing shall not be used for power, instrumentation, or control cables. Flexible metallic conduits shall only be used in short lengths to connect components.	Comply	Cable trays are constructed of galvanized steel. All exposed conduit is hot-dipped, rigid galvanized steel or rigid aluminum. Thinned wall electrical metallic tubing (EMT) is not used for power, control, or instrumentation.
References	**Document ID** DC-3.06 Rev. 3 [Section 4.1.1] - Conduit Systems for Power Plants MCS-1465.00-00-0008 Rev. 14 [App A.1; Section D.3.a] - Design Basis Specification for Fire Protection		
		Submit for NRC Approval	PVC conduit is permitted in embedded and buried locations. See Attachment L of the License Amendment Request for further details on the request for NRC approval for evaluation of PVC conduits.
References	**Document ID** DC-3.06 Rev. 3 [Section 4.2, 4.3] - Conduit Systems for Power Plants		
3.3.5.3 [Electrical Cable Flame Propagation Limits]	3.3.5.3* Electric cable construction shall comply with a flame propagation test as acceptable to the AHJ.	Comply	Electrical cable complies with IEEE-383 flame propagation testing which is acceptable as outlined in FAQ 06-0022, "Acceptable Electrical Cable Construction Tests."
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App. A.1; Section D.3.f] - Design Basis Specification for Fire Protection		
3.3.6 Roofs.	3.3.6 Roofs. Metal roof deck construction shall be designed and installed so the roofing system will not sustain a self-propagating fire on the underside of the deck when the deck is heated by a fire inside the building. Roof coverings shall be Class A as determined by tests described in NFPA 256, Standard Methods of Fire Tests of Roof Coverings.	Comply	The Fire Protection Program Design Basis Specification states that the "metal deck roof construction is listed as Class I by Factory Mutual System Approval Guides or Class A by Underwriters' Laboratories." A Factory Mutual Class I roof is considered equivalent to NFPA 256 Class A roof classification.
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App. A.1; Section D.1.f] - Design Basis Specification for Fire Protection		
3.3.7 Bulk Flammable Gas Storage.	3.3.7 Bulk Flammable Gas Storage. Bulk compressed or cryogenic flammable gas storage shall not be permitted inside structures housing systems, equipment, or components important to nuclear safety.	Comply	Bulk flammable gas is not stored in structures housing systems, equipment, or components important to nuclear safety.
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App A.1; Section D.2.b] - Design Basis Specification for Fire Protection NEWP 7.2 Rev. 1 [Section 3] - Storing Chemicals NSD-313 Rev. 13 [Section 313.5.1] - Control of Flammable and Combustible Materials		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.3.7.1 [Bulk Flammable Gas Location Requirements]	3.3.7.1 Storage of flammable gas shall be located outdoors, or in separate detached buildings, so that a fire or explosion will not adversely impact systems, equipment, or components important to nuclear safety. NFPA 50A, Standard for Gaseous Hydrogen Systems at Consumer Sites, shall be followed for hydrogen storage.	Comply	Bulk flammable gas is stored in the northwest yard area.
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App A.1; Section D.2.b] - Design Basis Specification for Fire Protection NSD-313 Rev. 13 [Section 313.5.1] - Control of Flammable and Combustible Materials		
		Complies via Use of EEEE	The bulk hydrogen storage cylinders are installed with the long axis perpendicular to the plant. A Design Engineering Analysis of Hydrogen Tank Failure found that safety related systems would not be affected in the event of a failure. The hydrogen storage was evaluated for compliance in the NFPA 55 Code Conformance Review. Note that NFPA 50A was incorporated into NFPA 55. The MNS Code of Record is NFPA 50A, 1978 edition.
References	**Document ID** MCC-1435.00-00-0036 Rev. 0 - NFPA 55 Code Conformance Review MCC-1513.03-00-0001 Rev. 1 - Hydrogen Storage Tank Failure		
3.3.7.2 [Bulk Flammable Gas Container Restrictions]	3.3.7.2 Outdoor high-pressure flammable gas storage containers shall be located so that the long axis is not pointed at buildings.	Complies via Use of EEEE	The bulk hydrogen storage cylinders are orientated with the long axis parallel to plant buildings. An evaluation conducted by MNS found this configuration to be acceptable.
References	**Document ID** MCC-1513.03-00-0001 Rev. 1 - Hydrogen Storage Tank Failure MCS-1465.00-00-0008 Rev. 14 - Design Basis Specification for Fire Protection		
3.3.7.3 [Bulk Flammable Gas Cylinder Limitations]	3.3.7.3 Flammable gas storage cylinders not required for normal operation shall be isolated from the system.	Comply	Gas cylinders are isolated when not in use and controlled by plant directives.
References	**Document ID** NEWP 7.2 Rev. 1 [Section 3] - Storing Chemicals NSD-313 Rev. 13 [Section 313.5.1] - Control of Flammable and Combustible Materials		

Attachment A
NEI 04-02 Table B-1 Transition of Fundamental Fire Protection Program & Design Elements

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.3.8 Bulk Storage of Flammable and Combustible Liquids.	3.3.8 Bulk Storage of Flammable and Combustible Liquids. Bulk storage of flammable and combustible liquids shall not be permitted inside structures containing systems, equipment, or components important to nuclear safety. As a minimum, storage and use shall comply with NFPA 30, Flammable and Combustible Liquids Code.	Complies via Use of EEEE	Bulk storage of flammable/combustible liquids include the Turbine Oil Transfer Tanks, Service Building Lube Oil Room, and Diesel Generator Lube Oil Transfer Tanks which were installed as part of the original plant design. The bulk oil storage was evaluated for compliance in the NFPA 30 Code Conformance Review. The MNS Code of Record is NFPA 30, 1977 edition.
References	**Document ID** MCC-1435.00-00-0035 Rev. 0 - NFPA 30 Code Conformance Review MCS-1465.00-00-0008 Rev. 14 [Section 4.1.8.3.9; App A.1, Section D.2.d] - Design Basis Specification for Fire Protection NSD-313 Rev. 13 [Section 313.5, Supplement 3] - Control of Flammable and Combustible Materials		
3.3.9 Transformers.	3.3.9* Transformers. Where provided, transformer oil collection basins and drain paths shall be periodically inspected to ensure that they are free of debris and capable of performing their design function.	Comply	The transformer oil collection basins are periodically inspected to ensure they perform their design function as part of the transformer wet test.
References	**Document ID** PT/1/A/4400/001B Rev. 013 - Automatic Mulsifyre System Annual Test PT/2/A/4400/001B Rev. 015 - Automatic Mulsifyre System Annual Test		
3.3.10 Hot Pipes and Surfaces.	3.3.10* Hot Pipes and Surfaces. Combustible liquids, including high flashpoint lubricating oils, shall be kept from coming in contact with hot pipes and surfaces, including insulated pipes and surfaces. Administrative controls shall require the prompt cleanup of oil on insulation.	Comply	Administrative directives ensure, upon identification, the prompt correction of any oil leakage.
References	**Document ID** NSD-104 Rev. 33 [Section 104.5.5] - Materiel Condition/Housekeeping, Foreign Material Exclusion and Seismic Concerns NSD-413 Rev. 9 [Section 413.4.1, 413.4.7] - Fluid Leak Management Program		
3.3.11 Electrical Equipment	3.3.11 Electrical Equipment Adequate clearance, free of combustible material, shall be maintained around energized electrical equipment.	Comply	Administrative directives control combustible material near electrical equipment.
References	**Document ID** NSD-313 Rev. 13 [Section 313.5.2, App. A] - Control of Flammable and Combustible Materials		
3.3.12 Reactor Coolant Pumps	3.3.12* Reactor Coolant Pumps. For facilities with non-inerted containments, reactor coolant pumps with an external lubrication system shall be provided with an oil collection system. The oil collection system shall be designed and installed such that leakage from the oil system is safely contained for off normal conditions such as accident conditions or earthquakes. All of the following shall apply.	Comply	The Reactor Coolant Pump (NCP) oil collection systems are designed to withstand off normal conditions such as accident conditions or a safe shutdown earthquake (SSE).

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
References	Document ID MCS-1465.00-00-0008 Rev. 14 [App A.1; Section D.2.a(3)] - Design Basis Specification for Fire Protection MCS-1553.NC-00-0001 Rev. 29 [Section 2.3] - Design Basis Specification for the NC System		
3.3.12 Reactor Coolant Pumps (1)	3.3.12 (1) The oil collection system for each reactor coolant pump shall be capable of collecting lubricating oil from all potential pressurized and nonpressurized leakage sites in each reactor coolant pump oil system.	Comply	The Reactor Coolant Pump (NCP) oil collection system for each Reactor Coolant Pump is capable of collecting leakage oil for all pressurized and non-pressurized sites in the pump.
References	Document ID MCM 1201.01-0080.001 Rev. 18 - Reactor Coolant Pump MCS-1465.00-00-0008 Rev. 14 - Design Basis Specification for Fire Protection MCS-1553.NC-00-0001 Rev. 29 [Section 3.1.1.2.3, 4.1.1.2.3] - Design Basis Specification for the NC System		
		Submit for NRC Approval	The Reactor Coolant Pump oil collection systems are designed and sized to collect and contain oil from potentially pressurized and unpressurized leakage areas in a seismic event resulting in failure of the lubrication system. See Attachment L of the License Amendment Request for further details on the request for NRC approval for evaluation of oil misting from the reactor coolant pumps/motors.
3.3.12 Reactor Coolant Pumps (2)	3.3.12 (2) Leakage shall be collected and drained to a vented closed container that can hold the inventory of the reactor coolant pump lubricating oil system.	Comply	Leakage oil is drained to a vented closed container capable of containing the maximum potential inventory.
References	Document ID MCFD-1553-04.00 Rev. 11 - Flow Diagram of Reactor Coolant System (NC) MCS-1465.00-00-0008 Rev. 14 - Design Basis Specification for Fire Protection MCS-1553.NC-00-0001 Rev. 29 - Design Basis Specification for the NC System		
3.3.12 Reactor Coolant Pumps (3)	3.3.12 (3) A flame arrestor is required in the vent if the flash point characteristics of the oil present the hazard of a fire flashback.	Comply	A flame arrestor is provided in each of the Reactor Coolant Pump drain tank vents.
References	Document ID MCFD-1553-04.00 Rev. 11 - Flow Diagram of Reactor Coolant System (NC)		
3.3.12 Reactor Coolant Pumps (4)	3.3.12 (4) Leakage points on a reactor coolant pump motor to be protected shall include but not be limited to the lift pump and piping, overflow lines, oil cooler, oil fill and drain lines and plugs, flanged connections on oil lines, and the oil reservoirs, where such features exist on the reactor coolant pumps.	Comply	All potential vulnerable points on the Reactor Coolant Pumps are protected by components capable of containing the leaks. All oil carrying pipes and assemblies, at the lower bearing area, are located inside the motor air frame. All oil carrying pipes and assemblies, at the upper bearing area, are located inside a shroud external to the frame. The leakage within the upper shroud or motor air frame is collected in the NC pump motor drain tanks.

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
References	**Document ID** MCS-1553.NC-00-0001 Rev. 29 - Design Basis Specification for the NC System		
3.3.12 Reactor Coolant Pumps (5)	3.3.12 (5) The collection basin drain line to the collection tank shall be large enough to accommodate the largest potential oil leak such that oil leakage does not overflow the basin.	Comply	Reactor Coolant Pumps are enclosed to contain leaks and high pressure oil sprays. The enclosure ensures drainage directly to the oil collection basin and the drain lines are sized to control the maximum volume.
References	**Document ID** MCS-1553.NC-00-0001 Rev. 29 - Design Basis Specification for the NC System		
3.4 Industrial Fire Brigade.	N/A	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.4.1 On-Site Fire-Fighting Capability	3.4.1 On-Site Fire-Fighting Capability. All of the following requirements shall apply.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.4.1 On-Site Fire-Fighting Capability (a)	3.4.1 (a) A fully staffed, trained, and equipped fire-fighting force shall be available at all times to control and extinguish all fires on site. This force shall have a minimum complement of five persons on duty and shall conform with the following NFPA standards as applicable: (1) NFPA 600, Standard on Industrial Fire Brigades (interior structural fire fighting) (2) NFPA 1500, Standard on Fire Department Occupational Safety and Health Program (3) NFPA 1582, Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians	Complies via Use of EEEE	The onsite Fire Brigade is appropriately staffed, trained, and equipped and complies with NFPA 600. The MNS Code of Record is NFPA 600, 2005 edition. NFPA 1500 and 1582 do not apply to MNS.
References	**Document ID** MCC-1435.00-00-0040 Rev. 0 - NFPA 600 Code Conformance Review		
		Complies with previous NRC Approval	SLC 16.13.1 "Fire Brigade" states: A site Fire Brigade of at least five members shall be maintained onsite. If the fire brigade composition is not met then restore mimimum fire brigade compostion within 2 hours. The Fire Brigade requirement is met by using personnel from Operations and Single Point of Contact (SPOC). Four (4) personnel from Operations are required (including the Fire Brigade Leader) and the other (1) person is from SPOC. SLC 16.13.4 "Minimum Station Staffing Requirements" identifies the same requirements as SLC 16.13.1 and states "The 2-hour remedial action for restoring minimum station staffing levels is consistent with TS 5.2.2c and 5.2.2d, which allow 2 hours to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements."

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
			This staffing position is documented in the McGuire Units 1 and 2 Technical Specifications, section 5.2.2.c which states "Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements." This reflects the current MNS fire brigade organization. This position is in accordance with FAQ 12-0063.
References	**Document ID** SLC 16.13.1 Rev. 51 - Fire Brigade SLC 16.13.4 Rev. 58 - Minimum Station Staffing Requirements Technical Specifications Rev. 239 / 221 [Section 5.2.2.c] - McGuire Units 1 and 2 Technical Specifications		
3.4.1 On-Site Fire-Fighting Capability (b)	3.4.1 (b) * Industrial fire brigade members shall have no other assigned normal plant duties that would prevent immediate response to a fire or other emergency as required.	Comply	The industrial fire brigade is appropriately staffed and members are independent of other responsibilities during a fire emergency.
References	**Document ID** NSD-112 Rev. 11 [Section 112.2.7] - Fire Brigade Organization, Training & Responsibilities SLC 16.13.1 Rev. 51 - Fire Brigade SLC 16.13.4 Rev. 58 - Minimum Station Staffing Requirements		
3.4.1 On-Site Fire-Fighting Capability (c)	3.4.1 (c) During every shift, the brigade leader and at least two brigade members shall have sufficient training and knowledge of nuclear safety systems to understand the effects of fire and fire suppressants on nuclear safety performance Exception: Sufficient training and knowledge shall be permitted to be provided by an operations advisor dedicated to industrial fire brigade support criteria.	Comply	Station directive dictates that during each shift the Fire Brigade Leader and a minimum of two brigade members have sufficient training and knowledge of the nuclear safety systems to understand the effects of fire and fire suppressants on the nuclear safety performance.
References	**Document ID** NSD-112 Rev. 11 [Section 112.2.7] - Fire Brigade Organization, Training & Responsibilities		
3.4.1 On-Site Fire-Fighting Capability (d)	3.4.1 (d) * The industrial fire brigade shall be notified immediately upon verification of a fire.	Comply	The industrial fire brigade is notified immediately upon verification of a fire.
References	**Document ID** NSD-112 Rev. 11 [Section 112.2.6] - Fire Brigade Organization, Training & Responsibilities RP/0/A/5700/025 Rev. 19 [Enclosure 4.1] - Fire Brigade Response		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.4.1 On-Site Fire-Fighting Capability (e)	3.4.1 (e) Each industrial fire brigade member shall pass an annual physical examination to determine that he or she can perform the strenuous activity required during manual fire-fighting operations. The physical examination shall determine the ability of each member to use respiratory protection equipment.	Comply	Annual physical examinations are required to remain on the "Active" list for MNS fire brigade members. The physical examinations include the use of respiratory equipment.
References	**Document ID**		
	NSD-112 Rev. 11 [Section 112.4] - Fire Brigade Organization, Training & Responsibilities		
3.4.2 Pre-Fire Plans.	3.4.2* Pre-Fire Plans. Current and detailed pre-fire plans shall be available to the industrial fire brigade for all areas in which a fire could jeopardize the ability to meet the performance criteria described in Section 1.5.	Comply	Current and detailed Fire Strategies (pre-fire plans) are available for all plant locations that contain systems or components that could impact nuclear safety performance or present a potential for radioactive releases or life safety.
References	**Document ID**		
	McGuire Nuclear Station Fire Strategies -		
3.4.2.1 [Pre-Fire Plan Contents]	3.4.2.1* The plans shall detail the fire area configuration and fire hazards to be encountered in the fire area, along with any nuclear safety components and fire protection systems and features that are present.	Comply	Detailed pre-fire plans are available in the McGuire Nuclear Station Fire Strategies. The Fire Strategies contain the following information: • Graphic representations of the various plant areas that depict the installed fire protection/suppression features • Equipment important to safety and other potentially affected equipment • Listing of special hazards including: Radiological, Electrical, Chemical, Physical, and Flammable Liquids Gases • Notes such as special access, special concerns, ventilation, etc Implementation Item: The Fire Strategies will be reviewed and updated to include any changes to equipment important to nuclear safety and other updates pertinent to the NFPA 805 Transition. See Implementation Item in Table S-3 of Attachment S.
References	**Document ID**		
	McGuire Nuclear Station Fire Strategies -		
3.4.2.2 [Pre-Fire Plan Updates]	3.4.2.2 Pre-fire plans shall be reviewed and updated as necessary.	Comply	The Fire Strategies are updated as required. Plant directives, for modification to plant features and equipment, require a review for potential impact to the Fire Strategies. A procedure is used to perform field walkdowns of a specific group of fire plan strategies annually to ensure accuracy.
References	**Document ID**		
	EDM-601 Rev. 14 - Engineering Change Manual		
	NSD-228 Rev. 10 [App. E] - Applicability Determination		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
	NSD-301 Rev. 41 - Engineering Change Program PT/0/B/4600/119 Rev. 000 - MNS Annual Fire Plan Strategy Walkdown		
3.4.2.3 [Pre-Fire Plan Locations]	3.4.2.3* Pre-fire plans shall be available in the control room and made available to the plant industrial fire brigade.	Comply	The Fire Strategies are available in the Control Room, at the Fire Brigade Administrator's Desk, and in the Work Control Center.
References	**Document ID** McGuire Nuclear Station Fire Strategies - PT/0/A/4600/112 Rev. 008 [Enclosure 13.7] - Exterior/Interior Fire Equipment Inspection RP/0/A/5700/025 Rev. 19 - Fire Brigade Response		
3.4.2.4 [Pre-Fire Plan Coordination Needs]	3.4.2.4* Pre-fire plans shall address coordination with other plant groups during fire emergencies.	Complies with Clarification	Fire Strategies (pre-fire plans), plant directives, and fire brigade procedures address coordination with other plant groups.
References	**Document ID** McGuire Nuclear Station Fire Strategies - NSD-112 Rev. 11 [Section 112.2] - Fire Brigade Organization, Training & Responsibilities RP/0/A/5700/025 Rev. 19 - Fire Brigade Response		
3.4.3 Training and Drills	3.4.3 Training and Drills. Industrial fire brigade members and other plant personnel who would respond to a fire in conjunction with the brigade shall be provided with training commensurate with their emergency responsibilities.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.4.3 Training and Drills (a)(1)	3.4.3 (a) Plant Industrial Fire Brigade Training. All of the following requirements shall apply. (1) Plant industrial fire brigade members shall receive training consistent with the requirements contained in NFPA 600, Standard on Industrial Fire Brigades, or NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, as appropriate.	Complies via Use of EEEE	Fire Brigade members receive training consistent with NFPA 600, 2005 edition. NFPA 1500 is not applicable to MNS.
References	**Document ID** MCC-1435.00-00-0040 Rev. 0 - NFPA 600 Code Conformance Review NSD-112 Rev. 11 - Fire Brigade Organization, Training & Responsibilities		
3.4.3 Training and Drills (a)(2)	3.4.3 (a)(2) Industrial fire brigade members shall be given quarterly training and practice in fire fighting, including radioactivity and health physics considerations, to ensure that each member is thoroughly familiar with the steps to be taken in the event of a fire.	Comply	Quarterly training is administered to remain on the "Active" list. Training includes fire fighting strategies in radiological areas.
References	**Document ID** MTP 7111.0 [Attachment 6] - Emergency Response (ER) Training Program		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
	NSD-112 Rev. 11 [Section 112.4] - Fire Brigade Organization, Training & Responsibilities		
3.4.3 Training and Drills (a)(3)	3.4.3 (a)(3) A written program shall detail the industrial fire brigade training program.	Comply	MNS maintains a written program detailing the industrial fire brigade training program.
References	Document ID		
	MTP 7111.0 - Emergency Response (ER) Training Program		
	NSD-112 Rev. 11 [Section 112.4] - Fire Brigade Organization, Training & Responsibilities		
3.4.3 Training and Drills (a)(4)	3.4.3 (a)(4) Written records that include but are not limited to initial industrial fire brigade classroom and hands-on training, refresher training, special training schools attended, drill attendance records, and leadership training for industrial fire brigades shall be maintained for each industrial fire brigade member.	Comply	Drill and training records for fire brigade members are maintained, including initial training, refresher training, drills, and fire brigade leader training.
References	Document ID		
	MTP 7111.0 - Emergency Response (ER) Training Program		
	NSD-112 Rev. 11 - Fire Brigade Organization, Training & Responsibilities		
	PT/0/B/4600/118 Rev. 003 - Fire Brigade Qualification Verification		
	PT/0/B/4600/121 Rev. 6 - Fire Drill		
3.4.3 Training and Drills (b)	3.4.3 (b) Training for Non-Industrial Fire Brigade Personnel. Plant personnel who respond with the industrial fire brigade shall be trained as to their responsibilities, potential hazards to be encountered, and interfacing with the industrial fire brigade.	Comply	Other non-fire brigade personnel that respond to a fire incident are trained with regards to the responsibilities, hazards, and for interfacing with the fire brigade.
References	Document ID		
	MTP 7111.0 [Section 112.5] - Emergency Response (ER) Training Program		
	NSD-112 Rev. 11 - Fire Brigade Organization, Training & Responsibilities		
	PT/0/B/4600/121 Rev. 6 - Fire Drill		
3.4.3 Training and Drills (c)(1)	3.4.3 (c) * Drills. All of the following requirements shall apply. (1) Drills shall be conducted quarterly for each shift to test the response capability of the industrial fire brigade.	Comply	The industrial fire brigade conducts quarterly drills for each shift.
References	Document ID		
	NSD-112 Rev. 11 [Section 112.5] - Fire Brigade Organization, Training & Responsibilities		
	PT/0/B/4600/121 Rev. 6 [Section 3] - Fire Drill		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.4.3 Training and Drills (c)(2)	3.4.3 (c)(2) Industrial fire brigade drills shall be developed to test and challenge industrial fire brigade response, including brigade performance as a team, proper use of equipment, effective use of pre-fire plans, and coordination with other groups. These drills shall evaluate the industrial fire brigade's abilities to react, respond, and demonstrate proper fire-fighting techniques to control and extinguish the fire and smoke conditions being simulated by the drill scenario.	Comply	Drills are developed to challenge the industrial fire brigade and the response are evaluated, critiqued, and documented.
References	**Document ID**		
	NSD-112 Rev. 11 [Section 112.5] - Fire Brigade Organization, Training & Responsibilities		
	PT/0/B/4600/121 Rev. 6 [Section 1] - Fire Drill		
3.4.3 Training and Drills (c)(3)	3.4.3 (c)(3) Industrial fire brigade drills shall be conducted in various plant areas, especially in those areas identified to be essential to plant operation and to contain significant fire hazards.	Comply	Drills are conducted in various plant areas, especially in those areas identified to be essential to plant operation and to containing significant fire hazards.
References	**Document ID**		
	NSD-112 Rev. 11 [Section 112.5] - Fire Brigade Organization, Training & Responsibilities		
	PT/0/B/4600/121 Rev. 6 - Fire Drill		
3.4.3 Training and Drills (c)(4)	3.4.3 (c)(4) Drill records shall be maintained detailing the drill scenario, industrial fire brigade member response, and ability of the industrial fire brigade to perform as a team.	Comply	Drill records are maintained and performance critiques are conducted which document the scenario, attendance, and performance of the fire brigade.
References	**Document ID**		
	NSD-112 Rev. 11 [Section 112.5] - Fire Brigade Organization, Training & Responsibilities		
	PT/0/B/4600/121 Rev. 6 - Fire Drill		
3.4.3 Training and Drills (c)(5)	3.4.3 (c)(5) A critique shall be held and documented after each drill.	Comply	Each fire drill is critiqued and the critique is documented and maintained.
References	**Document ID**		
	NSD-112 Rev. 11 [Section 112.5] - Fire Brigade Organization, Training & Responsibilities		
	PT/0/B/4600/121 Rev. 6 - Fire Drill		
3.4.4 Fire-Fighting Equipment.	3.4.4 Fire-Fighting Equipment. Protective clothing, respiratory protective equipment, radiation monitoring equipment, personal dosimeters, and fire suppression equipment such as hoses, nozzles, fire extinguishers, and other needed equipment shall be provided for the industrial fire brigade. This equipment shall conform with the applicable NFPA standards.	Comply	The appropriate fire fighting equipment is located in each fire area and on the fire brigade equipment carts. Radiation Protection Technicians will respond with appropriate radiological monitoring equipment. Equipment is purchased by the Emergency Service Coordinator who ensures that the equipment complies with applicable NFPA standards. Fire brigade PPE is inspected per NFPA requirements.
References	**Document ID**		
	McGuire Nuclear Station Fire Strategies -		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
	PT/0/A/4600/112 Rev. 008 [Enclosure 13.5 and 13.6] - Exterior/Interior Fire Equipment Inspection PT/0/B/4600/126 Rev. 1 - Fire Brigade PPE Inspection RP/0/A/5700/025 Rev. 19 - Fire Brigade Response		
3.4.5 Off-Site Fire Department Interface.	N/A	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.4.5.1 Mutual Aid Agreement.	3.4.5.1 Mutual Aid Agreement. Off-site fire authorities shall be offered a plan for their interface during fires and related emergencies on site.	Comply	Offsite fire departments are provided a plan for interface during fires and other conduitions requiring the use of the fire fighting resources through Letters of Agreement. The Letters of Agreement identify the responding organizations would be under the direct guidance of MNS personnel. In addition, the Offsite Fire Department Strategy indicates that communciation will be established with the MNS Fire Brigade Leader as the point of contact.
References	**Document ID** 2010-03-16 Letter of Agreement - Cornelius - Letter of Agreement, Duke Energy Carolinas with Cornelius Volunteer Fire Department 2010-03-16 Letter of Agreement - Mecklenburg - Letter of Agreement, Duke Energy Carolinas with Mecklenburg County Fire Marshal 2010-05-10 Letter of Agreement - Huntersville - Letter of Agreement, Duke Energy Carolinas with Huntersville Fire Department FS/0/B/9000/200 Rev. 0 - Offsite Fire Department Fire Strategy #200 McGuire Emergency Plan - RP/0/A/5700/025 Rev. 19 - Fire Brigade Response		
3.4.5.2 Site-Specific Training.	3.4.5.2* Site-Specific Training. Fire fighters from the off-site fire authorities who are expected to respond to a fire at the plant shall be offered site-specific training and shall be invited to participate in a drill at least annually.	Comply	Annual training is specified in the Letters of Agreement with the off-site fire authorities. The training includes topics in fire protection, radiation protection, station familiarization, and station security procedures.
References	**Document ID** 2010-03-16 Letter of Agreement - Cornelius - Letter of Agreement, Duke Energy Carolinas with Cornelius Volunteer Fire Department 2010-03-16 Letter of Agreement - Mecklenburg - Letter of Agreement, Duke Energy Carolinas with Mecklenburg County Fire Marshal 2010-05-10 Letter of Agreement - Huntersville - Letter of Agreement, Duke Energy Carolinas with Huntersville Fire Department NSD-112 Rev. 11 [Section 112.5] - Fire Brigade Organization, Training & Responsibilities		
3.4.5.3 Security and Radiation Protection.	3.4.5.3* Security and Radiation Protection. Plant security and radiation protection plans shall address off-site fire authority response.	Comply	Site documents include Security and Radiation Protection provisions for assistance to off-site fire authorities.
References	**Document ID** NSD-112 Rev. 11 [Section 112.2.9, 112.2.10] - Fire Brigade Organization, Training & Responsibilities RP/0/A/5700/025 Rev. 19 [Enclosure 4.1] - Fire Brigade Response		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.4.6 Communications.	3.4.6* Communications. An effective emergency communications capability shall be provided for the industrial fire brigade.	Comply	Emergency communication capabilities include the telephone system, public address system, and radios.
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App A.1; Section D.5.d] - Design Basis Specification for Fire Protection RP/0/A/5700/025 Rev. 19 - Fire Brigade Response		
3.5 Water Supply	N/A	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.5.1 [Water Supply Flow Code Requirements]	3.5.1 A fire protection water supply of adequate reliability, quantity, and duration shall be provided by one of the two following methods. (a) Provide a fire protection water supply of not less than two separate 300,000-gal (1,135,500-L) supplies. (b) Calculate the fire flow rate for 2 hours. This fire flow rate shall be based on 500 gpm (1892.5 L/min) for manual hose streams plus the largest design demand of any sprinkler or fixed water spray system(s) in the power block as determined in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, or NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection. The fire water supply shall be capable of delivering this design demand with the hydraulically least demanding portion of fire main loop out of service.	Comply	MNS complies via method (b). The maximum single demand is 1900 gpm to a main transformer mulifyre system. This fire flow rate for two hours plus a 500 gpm hose stream is 288,000 gallons. The water supply for the fire protection system is Lake Norman which has a capacity well in excess of this demand.
References	**Document ID** MCS-1599.RF-00-0001 Rev. 23 [Section 3.1.2.1.1] - Design Basis Specification for the RF/RY System		
3.5.2 [Water Supply Tank Code Requirements]	3.5.2* The tanks shall be interconnected such that fire pumps can take suction from either or both. A failure in one tank or its piping shall not allow both tanks to drain. The tanks shall be designed in accordance with NFPA 22, Standard for Water Tanks for Private Fire Protection. Exception No. 1: Water storage tanks shall not be required when fire pumps are able to take suction from a large body of water (such as a lake), provided each fire pump has its own suction and both suctions and pumps are adequately separated. Exception No. 2: Cooling tower basins shall be an acceptable water source for fire pumps when the volume is sufficient for both purposes and water quality is consistent with the demands of the fire service.	Comply	MNS does not utilize tanks for fire protection water. MNS complies via Exception 1 and draws water from Lake Norman as the primary fire water source using separated fire pumps with independent suction lines.
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App A.1; Section E.2] - Design Basis Specification for Fire Protection MCS-1599.RF-00-0001 Rev. 23 [Section 3.11] - Design Basis Specification for the RF/RY System		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.5.3 [Water Supply Pump Code Requirements]	3.5.3* Fire pumps, designed and installed in accordance with NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, shall be provided to ensure that 100 percent of the required flow rate and pressure are available assuming failure of the largest pump or pump power source.	Complies via Use of EEEE	The pumps were evaluated in accordance with NFPA 20. Three fire pumps are provided and each is sized to provide 100 percent of the required flow rate and pressure. The MNS Code of Record is NFPA 20, 1978 edition.
References	Document ID MCC-1435.00-00-0033 Rev. 0 - NFPA 20 Code Conformance Review MCS-1465.00-00-0008 Rev. 14 [Section 4.1.8.3.6] - Design Basis Specification for Fire Protection		
		Submit for NRC Approval	The fire pump controllers are not installed to all requirements of NFPA 20. See Attachment L to the License Amendment Request for further details on the request for NRC approval of minor non-conformances with NFPA 20.
3.5.4 [Water Supply Pump Diversity and Redundancy]	3.5.4 At least one diesel engine-driven fire pump or two more seismic Category I Class IE electric motor-driven fire pumps connected to redundant Class IE emergency power buses capable of providing 100 percent of the required flow rate and pressure shall be provided.	Complies with previous NRC Approval	Diesel-engine driven fire water pumps are not utilized. MNS uses three electric fire pumps capable of each providing 100% of the required flow and pressure. NRC SER Supplement 2 states "The fire water system is common to both units and consists of three full capacity 2500 gallons per minute motor drive pumps." "Power to fire pump A is from Unit 2, 2TB switchgear; power to fire pump B is from Unit 1 1TD switchgear; and power to fire pump C is from the 44 kilovolt substation independent of the McGuire Station auxiliary power system." "We have reviewed the design criteria and bases for the water suppression system and conclude that these systems meet the guidelines of Appendix A to Branch Technical Position 9.5.1 and are in accord with the applicable portions of the National Fire Protection Associated (NFPA), Codes, and are, therefore, acceptable." There have been no changes to invalidate the basis for this approval.
References	Document ID MCS-1465.00-00-0008 Rev. 14 [App A.1; Section E.2.c] - Design Basis Specification for Fire Protection NRC SER No. 2 dated March 1, 1979 [App. D; Section II.A] - Safety Evaluation Report Supplement 2		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.5.5 [Water Supply Pump Separation Requirements]	3.5.5 Each pump and its driver and controls shall be separated from the remaining fire pumps and from the rest of the plant by rated fire barriers.	Complies with previous NRC Approval	Fire Pumps A and B are separated from Fire Pump C and their associated controllers by 3 hour fire barriers. NRC SER Supplement 2 states "The fire pumps are located in the seismic Category 1 intake structure and separated by three hour fire rated barriers from the other pumps in that structure." "We have reviewed the design criteria and bases for the water suppression system and conclude that these systems meet the guideline sof Appendix A to Branch Technical Position 9.5.1 and are in accord with the applicable portions of the National Fire Protection Associated (NFPA), Codes, and are, therefore, acceptable." There have been no changes to invalidate the basis for this approval.
References	**Document ID** NRC SER No. 2 dated March 1, 1979 [App. D; Section II.A] - Safety Evaluation Report Supplement 2		
3.5.6 [Water Supply Pump Start/Stop Requirements]	3.5.6 Fire pumps shall be provided with automatic start and manual stop only.	Comply	Fire pumps are provided with auto-start and can only be shut off by the manual stop.
References	**Document ID** MCC-1435.00-00-0033 Rev. 0 [Section 10.5.2] - NFPA 20 Code Conformance Review		
3.5.7 [Water Supply Pump Connection Requirements]	3.5.7 Individual fire pump connections to the yard fire main loop shall be provided and separated with sectionalizing valves between connections.	Comply	There are separate connections between the fire pumps and the main fire loop for MNS. Post indicator valves are provided.
References	**Document ID** MC-1384-07.22-00 Rev. 8 - Fire Plan Outside Fire Loop MCS-1465.00-00-0008 Rev. 14 [App A.1; Section E.2.a] - Design Basis Specification for Fire Protection		
3.5.8 [Water Supply Pressure Maintenance Limitations]	3.5.8 A method of automatic pressure maintenance of the fire protection water system shall be provided independent of the fire pumps.	Comply	The system pressure is maintained by a pressurization tank and two jockey pumps.
References	**Document ID** MCC-1435.00-00-0033 Rev. 0 [Section 5.24] - NFPA 20 Code Conformance Review		
3.5.9 [Water Supply Pump Operation Notification]	3.5.9 Means shall be provided to immediately notify the control room, or other suitable constantly attended location, of operation of fire pumps.	Comply	Visible pump running signals for the fire pumps are sent to the control room.
References	**Document ID** MCC-1435.00-00-0033 Rev. 0 [Section 10.4.7] - NFPA 20 Code Conformance Review		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.5.10 [Water Supply Yard Main Code Requirements]	3.5.10 An underground yard fire main loop, designed and installed in accordance with NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, shall be installed to furnish anticipated water requirements.	Complies via Use of EEEE	An underground fire loop is provided around the perimeter of the plant to service fire protection requirements. The underground fire water piping system was evaluated in accordance with NFPA 24. The MNS Code of Record is NFPA 24, 1977 edition.
References	**Document ID** MCC-1435.00-00-0034 Rev. 0 - NFPA 24 Code Conformance Review MCS-1465.00-00-0008 Rev. 14 [Section 4.1.8.3.7] - Design Basis Specification for Fire Protection		
3.5.11 [Water Supply Yard Main Maintenance Issues]	3.5.11 Means shall be provided to isolate portions of the yard fire main loop for maintenance or repair without simultaneously shutting off the supply to both fixed fire suppression systems and fire hose stations provided for manual backup. Sprinkler systems and manual hose station standpipes shall be connected to the plant fire protection water main so that a single active failure or a crack to the water supply piping to these systems can be isolated so as not to impair both the primary and backup fire suppression systems.	Comply	Sectionalizing valves are provided to allow isolation of various sections of the fire water system for maintenance or repair. The main underground fire loop is provided with post indicator valves that are arranged to provide isolation to portions of the loop for maintenance or repair without shutting off the complete system. The Fire Protection Program Design Basis Specification states "Each sprinkler system and manual hose station has an independent connection to the fire protection feeder; therefore, a single failure cannot impair both the primary and backup fire protection systems."
References	**Document ID** MC-1384-07.22-00 Rev. 8 - Fire Plan Outside Fire Loop MCC-1435.00-00-0034 Rev. 0 [Section 6.6] - NFPA 24 Code Conformance Review MCS-1465.00-00-0008 Rev. 14 [App A.1; Section E.3.a] - Design Basis Specification for Fire Protection		
		Complies with previous NRC Approval	A single control valve is provided for the reactor building fire suppression and standpipe system. This configuration was identified and disucssed with the NRC which found the arrangement acceptable. The letter states, "I&E Inspection Reports numbered 50-369/80-25 and 50-370/80-15 contain items of noncompliance and deviations, which are presented below: Single Failure in the Fire Suppression System - The I&E inspection report was concerned with a containment piping arrangement, whereby, a single control valve in the fire protection water supply system could, if shut, prevent water from reaching the standpipe and sprinkler systems simultaneously. The applicant's response included a chronology of NRC review events that culminated in our approval for the use of a remote, manually operated control valve for the containment hose stations and sprinklers. We concur with the applicant's response and find the use of a single control valve to be acceptable, since it can readily be rendered open from the control room." There have been no changes to invalidate the basis for this

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
			approval.
References	Document ID 1981-01-08 NRC Memo - McGuire Nuclear Facility, I&E Notice of Deviation, Fire Protection		
3.5.12 [Water Supply Compatible Thread Connections]	3.5.12 Threads compatible with those used by local fire departments shall be provided on all hydrants, hose couplings, and standpipe risers. Exception: Fire departments shall be permitted to be provided with adapters that allow interconnection between plant equipment and the fire department equipment if adequate training and procedures are provided.	Comply	Threads compatible with those used by the local fire department are provided on all hydrants, hose couplings, and standpipe risers.
References	Document ID MCC-1435.00-00-0032 Rev. 0 [Section 4.7.2] - NFPA 14 Code Conformance Review MCC-1435.00-00-0034 Rev. 0 [Section 7.1.2] - NFPA 24 Code Conformance Review		
3.5.13 [Water Supply Header Options]	3.5.13 Headers fed from each end shall be permitted inside buildings to supply both sprinkler and standpipe systems, provided steel piping and fittings meeting the requirements of ANSI B31.1, Code for Power Piping, are used for the headers (up to and including the first valve) supplying the sprinkler systems where such headers are part of the seismically analyzed hose standpipe system. Where provided, such headers shall be considered an extension of the yard main system. Each sprinkler and standpipe system shall be equipped with an outside screw and yoke (OS&Y) gate valve or other approved shutoff valve.	Comply	MNS licensing commitments do not require seismically designed standpipe systems. Each water supply connection to the standpipe system is provided with a listed indicating valve. Each sprinkler system is equipped with a listed/approved control shutoff valve except for the Reactor Building sprinkler systems, reactor coolant pumps and pipe corridor. The Reactor Building sprinkler systems, reactor coolant pumps and pipe corridor are provided with seismically qualified control valves. UL/FM does not list/approve seismically qualified valves.
References	Document ID MCC-1435.00-00-0032 Rev. 0 [Section 6.3.6] - NFPA 14 Code Conformance Review MCS-1465.00-00-0008 Rev. 14 - Design Basis Specification for Fire Protection MCS-1599.RF-00-0001 Rev. 23 - Design Basis Specification for the RF/RY System		
3.5.14 [Water Supply Control Valve Supervision]	3.5.14* All fire protection water supply and fire suppression system control valves shall be under a periodic inspection program and shall be supervised by one of the following methods. (a) Electrical supervision with audible and visual signals in the main control room or other suitable constantly attended location. (b) Locking valves in their normal position. Keys shall be made available only to authorized personnel. (c) Sealing valves in their normal positions. This option shall be utilized only where valves are located within fenced areas or under the direct control of the owner/operator.	Comply	Fire protection valves are periodically inspected and electronically monitored in the Control Room or their position is locked or sealed in place.
References	Document ID		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
	MCS-1465.00-00-0008 Rev. 14 [App A.1; Section E.3.b] - Design Basis Specification for Fire Protection PT/0/A/4400/001C Rev. 061 - Fire Protection System Monthly Test		
3.5.15 [Water Supply Hydrant Code Requirements]	3.5.15 Hydrants shall be installed approximately every 250 ft (76 m) apart on the yard main system. A hose house equipped with hose and combination nozzle and other auxiliary equipment specified in NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, shall be provided at intervals of not more than 1000 ft (305 m) along the yard main system. Exception: Mobile means of providing hose and associated equipment, such as hose carts or trucks, shall be permitted in lieu of hose houses. Where provided, such mobile equipment shall be equivalent to the equipment supplied by three hose houses.	Comply	Hydrants are installed at a maximum of 250 ft on the yard main system. Hose houses are installed at a maximum of 1000 ft.
References	**Document ID** MC-1384-07.22-00 Rev. 8 - Fire Plan Outside Fire Loop MCC-1435.00-00-0034 Rev. 0 [Section 7.2.1] - NFPA 24 Code Conformance Review MCFD-1599-01.00 Rev. 17 - Flow Diagram of Fire Protection System (RF)		
		Complies via Use of EEEE	The hose houses were evaluated for compliance in the NFPA 24 Code Conformance Review.
References	**Document ID** MCC-1435.00-00-0034 Rev. 0 [Section 8] - NFPA 24 Code Conformance Review		
3.5.16 [Water Supply Dedicated Limits]	3.5.16* The fire protection water supply system shall be dedicated for fire protection use only. Exception No. 1: Fire protection water supply systems shall be permitted to be used to provide backup to nuclear safety systems, provided the fire protection water supply systems are designed and maintained to deliver the combined fire and nuclear safety flow demands for the duration specified by the applicable analysis. Exception No. 2: Fire protection water storage can be provided by plant systems serving other functions, provided the storage has a dedicated capacity capable of providing the maximum fire protection demand for the specified duration as determined in this section.	Submit for NRC Approval	The fire water supply system is used for specific purposes other than fire protection. See Attachment L of the License Amendment Request for NRC approval of the evaluation for alternate uses.
3.6 Standpipe and Hose Stations.	N/A	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements

Attachment A
NEI 04-02 Table B-1 Transition of Fundamental Fire Protection Program & Design Elements

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.6.1 [Standpipe and Hose Station Code Requirements]	3.6.1 For all power block buildings, Class III standpipe and hose systems shall be installed in accordance with NFPA 14, Standard for the Installation of Standpipe, Private Hydrant, and Hose Systems.	Complies with previous NRC Approval	The standpipe and hose system was found acceptable by the NRC. Appendix A to Branch Technical Position APCSB 9.5-1 Section E.3.d requires 1-1/2" hose connection/fire hose. This is a Class II standpipe. The NRC previously found the MNS standpipe and hose system acceptable per the Supplement 2 to the 1978 NRC SER. "Manual hose stations are located throughout the plant to ensure that an effective hose stream can be directed to any safety related area in the plant. These systems are consistent with the requirements of NFPA Standard No. 14, "Standpipe and Hose System for Sizing, Spacing, and Pipe Support Requirements... We have reviewed the design criteria and bases for the water suppression systems and conclude that these systems meet the guidelines of Appendix A to Branch Technical Position 9.5.1 and are in accord with the applicable portions of the National Fire Protection Association (NFPA), Codes, and are, therefore, acceptable." There have been no changes to invalidate the basis for this approval.
References	**Document ID** NRC SER No. 2 dated March 1, 1979 [App. D; Section II.A] - Safety Evaluation Report Supplement 2		
		Complies via Use of EEEE	The standpipe and hose system was evaluated in accordance with NFPA 14. The MNS Code of Record is NFPA 14, 1976 edition.
References	**Document ID** MCC-1435.00-00-0032 Rev. 0 - NFPA 14 Code Conformance Review MCS-1465.00-00-0008 Rev. 14 [Section 4.1.8.3.4] - Design Basis Specification for Fire Protection		
3.6.2 [Standpipe and Hose Station Capability Limitations]	3.6.2 A capability shall be provided to ensure an adequate water flow rate and nozzle pressure for all hose stations. This capability includes the provision of hose station pressure reducers where necessary for the safety of plant industrial fire brigade members and off-site fire department personnel.	Comply	The fire water supply system can provide adequate water flow and nozzle pressure at the hose stations. Pressure reducing devices are not requried as the fire brigade is trained on the use of fire hose streams.
References	**Document ID** MCC-1435.00-00-0032 Rev. 0 [Section 7.2] - NFPA 14 Code Conformance Review MCS-1465.00-00-0008 Rev. 14 [App A.1; Section E.3] - Design Basis Specification for Fire Protection		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.6.3 [Standpipe and Hose Station Nozzle Restrictions]	3.6.3 The proper type of hose nozzle to be supplied to each power block area shall be based on the area fire hazards. The usual combination spray/straight stream nozzle shall not be used in areas where the straight stream can cause unacceptable damage or present an electrical hazard to fire-fighting personnel. Listed electrically safe fixed fog nozzles shall be provided at locations where high-voltage shock hazards exist. All hose nozzles shall have shutoff capability and be able to control water flow from full open to full closed.	Comply	The appropriate hose nozzles have been provided.
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 [App A.1; Section E.3.e] - Design Basis Specification for Fire Protection RP/0/A/5700/025 Rev. 19 [Enclosure 4.3] - Fire Brigade Response		
3.6.4 [Standpipe and Hose Station Earthquake Provisions]	3.6.4 Provisions shall be made to supply water at least to standpipes and hose stations for manual fire suppression in all areas containing systems and components needed to perform the nuclear safety functions in the event of a safe shutdown earthquake (SSE).	Complies with previous NRC Approval	There were no design requirements in the original licensing of MNS for any standpipes to be functional in the event of an SSE. The NRC previously approved the hose stations in regards to the NFPA 14-1976 edition which does not contain provisions for seismically designed hose stations. Supplement 2 to the 1978 NRC Safety Evaluation Report states: "Manual hose stations are located throughout the plant to ensure that an effective hose stream can be directed to any safety related area in the plant. These systems are consistent with the requirements of NFPA Standard No. 14, "Standpipe and Hose System for Sizing, Spacing, and Pipe Support Requirements... We have reviewed the design criteria and bases for the water suppression systems and conclude that these systems meet the guidelines of Appendix A to Branch Technical Position 9.5.1 and are in accord with the applicable portions of the National Fire Protection Association (NFPA), Codes, and are, therefore, acceptable." There have been no changes to invalidate the basis for this approval.
References	**Document ID** 1979-03-01 NRC Letter [App. D; Section II.A] - SER Supplement No. 2		
3.6.5 [Standpipe and Hose Station Seismic Connection Limitations]	3.6.5 Where the seismic required hose stations are cross-connected to essential seismic non-fire protection water supply systems, the fire flow shall not degrade the essential water system requirement.	N/A	MNS does not have seismic required hose stations.
3.7 Fire Extinguishers.	3.7 Fire Extinguishers. Where provided, fire extinguishers of the appropriate number, size, and type shall be provided in accordance with NFPA 10, Standard for Portable Fire Extinguishers. Extinguishers shall be permitted to be positioned outside of fire areas due to radiological conditions.	Complies via Use of EEEE	Fire extinguishers, where provided, are in accordance with NFPA 10, and meet the associated number, size, and type requirements. The MNS Code of Record is NFPA 10, 1978 edition.

Attachment A
NEI 04-02 Table B-1 Transition of Fundamental Fire Protection Program & Design Elements

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
References	Document ID MCC-1435.00-00-0029 Rev. 0 - NFPA 10 Code Conformance Review MCS-1465.00-00-0008 Rev. 14 [Section 4.1.8.3.1] - Design Basis Specification for Fire Protection		
3.8 Fire Alarm and Detection Systems.	N/A	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.8.1 Fire Alarm	3.8.1 Fire Alarm. Alarm initiating devices shall be installed in accordance with NFPA 72, National Fire Alarm Code. Alarm annunciation shall allow the proprietary alarm system to transmit fire-related alarms, supervisory signals, and trouble signals to the control room or other constantly attended location from which required notifications and response can be initiated. Personnel assigned to the proprietary alarm station shall be permitted to have other duties. The following fire-related signals shall be transmitted: (1) Actuation of any fire detection device (2) Actuation of any fixed fire suppression system (3) Actuation of any manual fire alarm station (4) Starting of any fire pump (5) Actuation of any fire protection supervisory device (6) Indication of alarm system trouble condition	Complies via Use of EEEE	The fire alarm and signaling system was evaluated in accordance with NFPA 72. Signals (alarm, trouble) for detection devices, suppression system actuation, supervisory devices, manual fire alarm stations, and fire pump start annunicaite to a separate panel in the control room. MNS has various code of records: NFPA 72D, 1975 edition; NFPA 72, 2002 edition (Reactor Buidling Pipe Corridor and Containment EFA System); and NFPA 72, 2007 edition (Interior/Exterior Doghouses and modifications including MD501276/EC95846, MD501277/EC95847, EC95850 and EC103255.
References	Document ID EC 103255/MD501280B - EC 103258/MD501280D - EC 95846/MD501276 - EC 95847/MD501277 - EC 95850/MD501280A - MCC-1435.00-00-0037 Rev. 0 - NFPA 72 Code Conformance Review		
3.8.1.1 [Fire Alarm Communication Requirements]	3.8.1.1 Means shall be provided to allow a person observing a fire at any location in the plant to quickly and reliably communicate to the control room or other suitable constantly attended location.	Comply	Means to report a fire are provided including telephone and radio communication.
References	Document ID Duke PAT Rev. 08/01/2012 [Page 67] - Duke Energy - Plant Access Training		
3.8.1.2 [Fire Alarm Prompt Notification Limits]	3.8.1.2 Means shall be provided to promptly notify the following of any fire emergency in such a way as to allow them to determine an appropriate course of action:	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.8.1.2 [Fire Alarm Prompt Notification Limits] (1)	3.8.1.2 (1) General site population in all occupied areas	Comply	Means are provided to notify the general site population via the PA system.
References	**Document ID**		
	Duke PAT Rev. 08/01/2012 [Page 69] - Duke Energy - Plant Access Training		
	RP/0/A/5700/025 Rev. 19 [Section 1.5.12, Enclosure 4.1] - Fire Brigade Response		
3.8.1.2 [Fire Alarm Prompt Notification Limits] (2)	3.8.1.2 (2) Members of the industrial fire brigade and other groups supporting fire emergency response	Comply	Means are provided to notify the industrial fire brigade and other supporting groups via the PA systems, pagers, and radios.
References	**Document ID**		
	MCS-1465.00-00-0008 Rev. 14 [App A.1; Section D.5.c, E.1.b] - Design Basis Specification for Fire Protection		
	RP/0/A/5700/025 Rev. 19 [Section 1.5.12, Enclosure 4.1] - Fire Brigade Response		
3.8.1.2 [Fire Alarm Prompt Notification Limits] (3)	3.8.1.2 (3) Off-site fire emergency response agencies. Two independent means shall be available (e.g., telephone and radio) for notification of off-site emergency services	Comply	Means are provided to notify the offsite fire departments for assistance via phone (land line and cell) and radio.
References	**Document ID**		
	RP/0/A/5700/025 Rev. 19 [Section 1.5.12, Enclosure 4.1] - Fire Brigade Response		
3.8.2 Detection.	3.8.2 Detection. If automatic fire detection is required to meet the performance or deterministic requirements of Chapter 4, then these devices shall be installed in accordance with NFPA 72, National Fire Alarm Code, and its applicable appendixes.	Complies via Use of EEEE	The fire detection devices were evaluated in accordance with NFPA 72. See LAR Table 4-3 for required detection systems. MNS has various code of records: NFPA 72E, 1974 edition; NFPA 72, 2002 edition (Reactor Buidling Pipe Corridor and Containment EFA System); and NFPA 72, 2007 edition (Interior/Exterior Doghouses and modifications including MD501276/EC95846, MD501277/EC95847, EC95850 and EC103255.
References	**Document ID**		
	MCC-1435.00-00-0037 Rev. 0 - NFPA 72 Code Conformance Review		
	MCS-1465.00-00-0008 Rev. 14 [Sections 4.1.8.3.12, 4.1.8.3.14, and 4.1.8.3.15] - Design Basis Specification for Fire Protection		
3.9 Automatic and Manual Water-Based Fire Suppression Systems.	N/A	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.9.1 [Fire Suppression System Code Requirements]	3.9.1* If an automatic or manual water-based fire suppression system is required to meet the performance or deterministic requirements of Chapter 4, then the system shall be installed in accordance with the appropriate NFPA standards including the following: (1) NFPA 13, Standard for the Installation of Sprinkler Systems (2) NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection (3) NFPA 750, Standard on Water Mist Fire Protection Systems (4) NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems	Complies via Use of EEEE	MNS is protected by automatic wet pipe sprinkler systems, water spray system, and deluge systems that were designed to conform to the requirements of NFPA 13 and 15. See LAR Table 4-3 for required suppression systems. The MNS Code of Record for NFPA 13 is the 1978 edition and the Code of Record for NFPA 15 is the 1977 edition. There are no NFPA 16 Foam-Water or NFPA 750 Water Mist systems installed at MNS.
References	**Document ID**		
	MCC-1435.00-00-0046 Rev. 0 - NFPA 13 Code Conformance Review – Motor Driven CA Pump Rooms		
	MCC-1435.00-00-0047 Rev. 0 - NFPA 13 Code Conformance Review – Nuclear Service Water (RN) Pumps		
	MCC-1435.00-00-0048 Rev. 0 - NFPA 13 Code Conformance Review – Cable Shaft (RM 648)		
	MCC-1435.00-00-0049 Rev. 0 - NFPA 13 Code Conformance Review – Battery Rooms		
	MCC-1435.00-00-0050 Rev. 0 - NFPA 13 Code Conformance Review – Unit 1 Component Cooling (KC) Pumps		
	MCC-1435.00-00-0051 Rev. 0 - NFPA 13 Code Conformance Review – Reactor Building Pipe Corridor		
	MCC-1435.00-00-0052 Rev. 0 - NFPA 15 Code Conformance Review – CF Pump Turbine 1A, 1B, 2A, & 2B		
	MCC-1435.00-00-0053 Rev. 0 - NFPA 15 Code Conformance Review – Diesel Generator Lube Oil Transfer Storage		
	MCC-1435.00-00-0054 Rev. 0 - NFPA 15 Code Conformance Review – Hydrogen Seal Oil		
	MCC-1435.00-00-0055 Rev. 0 - NFPA 15 Code Conformance Review – Oil Purifier		
	MCC-1435.00-00-0056 Rev. 0 - NFPA 15 Code Conformance Review – Turbine Lube Oil Reservoir		
	MCC-1435.00-00-0057 Rev. 0 - NFPA 15 Code Conformance Review – Turbine Lube Oil Transfer Tank		
	MCC-1435.00-00-0058 Rev. 0 - NFPA 15 Code Conformance Review – Turbine Piping and Bearings		
	MCC-1435.00-00-0062 Rev. 0 - NFPA 13 Code Conformance Review - Reactor Building Annulus		
	MCC-1435.00-00-0063 Rev. 0 - NFPA 13 Code Conformance Review - Connecting Corridor (Room 508) - Auxiliary		
	MCC-1435.00-00-0064 Rev. 0 - NFPA 15 Code Conformance Review - Cable Spreading Rooms		
	MCS-1465.00-00-0008 Rev. 14 [4.1.8.3.3, 4.1.8.3.5; App A.1, Section E.3.c] - Design Basis Specification for Fire Protection		
		Complies with previous NRC Approval	A manually actuated "fog-type" sprinkler system is installed in each cable spreading room. However, the water spray systems provided do not meet all of provisions of the NFPA codes but have been approved by the NRC. NRC Supplement 5 states, "Areas that have been equipped or will be equipped with water suppression systems are: (a) Cable spreading room (Manual Fog System) (b) ... ...We have reviewed the design criteria and bases for the water

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
			suppression systems and conclude that these systems meet the guidelines of Appendix A to Branch Technical Position 9.5.1 and are in accord with the applicable portions of the National Fire Protection Association (NFPA), Codes, and are, therefore, acceptable." There have been no changes to invalidate the basis for this approval.
References	**Document ID** NRC SER No. 5 dated April 1981 - Safety Evaluation Report Supplement No.5		
3.9.2 [Fire Suppression System Flow Alarm]	3.9.2 Each system shall be equipped with a water flow alarm.	Complies via Use of EEEE	Each fixed automatic suppression system is provided with a water flow alarm device. Manual only actuated systems are not provided with water flow alarms. Lack of water flow alarms for manual actuated systems has been evaluated as acceptable in the code compliance evaluation(s).
References	**Document ID** MCC-1435.00-00-0046 Rev. 0 [Att. A; Section 6.9] - NFPA 13 Code Conformance Review – Motor Driven CA Pump Rooms MCC-1435.00-00-0047 Rev. 0 [Att. A; Section 6.9] - NFPA 13 Code Conformance Review – Nuclear Service Water (RN) Pumps MCC-1435.00-00-0048 Rev. 0 [Att. A; Section 6.9] - NFPA 13 Code Conformance Review – Cable Shaft (RM 648) MCC-1435.00-00-0049 Rev. 0 [Att. A; Section 6.9] - NFPA 13 Code Conformance Review – Battery Rooms MCC-1435.00-00-0050 Rev. 0 [Att. A; Section 6.9] - NFPA 13 Code Conformance Review – Unit 1 Component Cooling (KC) Pumps MCC-1435.00-00-0051 Rev. 0 [Att. A; Section 6.9] - NFPA 13 Code Conformance Review – Reactor Building Pipe Corridor MCC-1435.00-00-0052 Rev. 0 [Att. A; Section 5.11] - NFPA 15 Code Conformance Review – CF Pump Turbine 1A, 1B, 2A, & 2B MCC-1435.00-00-0053 Rev. 0 [Att. A; Section 5.11] - NFPA 15 Code Conformance Review – Diesel Generator Lube Oil Transfer Storage MCC-1435.00-00-0054 Rev. 0 [Att. A; Section 5.11] - NFPA 15 Code Conformance Review – Hydrogen Seal Oil MCC-1435.00-00-0055 Rev. 0 [Att. A; Section 5.11] - NFPA 15 Code Conformance Review – Oil Purifier MCC-1435.00-00-0056 Rev. 0 [Att. A; Section 5.11] - NFPA 15 Code Conformance Review – Turbine Lube Oil Reservoir MCC-1435.00-00-0057 Rev. 0 [Att. A; Section 5.11] - NFPA 15 Code Conformance Review – Turbine Lube Oil Transfer Tank MCC-1435.00-00-0058 Rev. 0 [Att. A; Section 5.11] - NFPA 15 Code Conformance Review – Turbine Piping and Bearings MCC-1435.00-00-0062 Rev. 0 [Att. A; Section 6.9] - NFPA 13 Code Conformance Review - Reactor Building Annulus MCC-1435.00-00-0063 Rev. 0 [Att. A; Section 6.9] - NFPA 13 Code Conformance Review - Connecting Corridor (Room 508) - Auxiliary MCC-1435.00-00-0064 Rev. 0 [Att. A; Section 5.11] - NFPA 15 Code Conformance Review - Cable Spreading Rooms		
3.9.3 [Fire Suppression System Alarm Locations]	3.9.3 All alarms from fire suppression systems shall annunciate in the control room or other suitable constantly attended location.	Comply	Fire suppression systems that are equipped with alarms annunciate in the Control Room.

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
References	Document ID MCFD-1599-02.02 Rev. 11 [Section 3.1.2.1.1, 3.4] - Flow Diagram of Fire Protection System.(RF)		
3.9.4 [Fire Suppression System Diesel Pump Sprinkler Protection]	3.9.4 Diesel-driven fire pumps shall be protected by automatic sprinklers.	N/A	MNS does not utilize diesel driven fire water pumps.
References	Document ID MCC-1435.00-00-0033 Rev. 0 - NFPA 20 Code Conformance Review		
3.9.5 [Fire Suppression System Shutoff Controls]	3.9.5 Each system shall be equipped with an OS&Y gate valve or other approved shutoff valve.	Complies via Use of EEEE	Each sprinkler system is equipped with an shutoff valve, or evaluated as acceptable /equivalent in the code compliance evaluation.
References	Document ID MCC-1435.00-00-0046 Rev. 0 [Att. A; Section 6.7] - NFPA 13 Code Conformance Review – Motor Driven CA Pump Rooms MCC-1435.00-00-0047 Rev. 0 [Att. A; Section 6.7] - NFPA 13 Code Conformance Review – Nuclear Service Water (RN) Pumps MCC-1435.00-00-0048 Rev. 0 [Att. A; Section 6.7] - NFPA 13 Code Conformance Review – Cable Shaft (RM 648) MCC-1435.00-00-0049 Rev. 0 [Att. A; Section 6.7] - NFPA 13 Code Conformance Review – Battery Rooms MCC-1435.00-00-0050 Rev. 0 [Att. A; Section 6.7] - NFPA 13 Code Conformance Review – Unit 1 Component Cooling (KC) Pumps MCC-1435.00-00-0051 Rev. 0 [Att. A; Section 6.7] - NFPA 13 Code Conformance Review – Reactor Building Pipe Corridor MCC-1435.00-00-0052 Rev. 0 [Att. A; Section 5.7] - NFPA 15 Code Conformance Review – CF Pump Turbine 1A, 1B, 2A, & 2B MCC-1435.00-00-0053 Rev. 0 [Att. A; Section 5.7] - NFPA 15 Code Conformance Review – Diesel Generator Lube Oil Transfer Storage MCC-1435.00-00-0054 Rev. 0 [Att. A; Section 5.7] - NFPA 15 Code Conformance Review – Hydrogen Seal Oil MCC-1435.00-00-0055 Rev. 0 [Att. A; Section 5.7] - NFPA 15 Code Conformance Review – Oil Purifier MCC-1435.00-00-0057 Rev. 0 [Att. A; Section 5.7] - NFPA 15 Code Conformance Review – Turbine Lube Oil Transfer Tank MCC-1435.00-00-0058 Rev. 0 [Att. A; Section 5.7] - NFPA 15 Code Conformance Review – Turbine Piping and Bearings MCC-1435.00-00-0062 Rev. 0 [Att. A; Section 6.7] - NFPA 13 Code Conformance Review - Reactor Building Annulus MCC-1435.00-00-0063 Rev. 0 [Att. A; Section 6.7] - NFPA 13 Code Conformance Review - Connecting Corridor (Room 508) - Auxiliary MCC-1435.00-00-0064 Rev. 0 [Att. A; Section 5.7] - NFPA 15 Code Conformance Review - Cable Spreading Rooms		
3.9.6 [Fire Suppression System Valve Supervision]	3.9.6 All valves controlling water-based fire suppression systems required to meet the performance or deterministic requirements of Chapter 4 shall be supervised as described in 3.5.14.	Comply	Valves are either electrically supervised or they are locked or sealed in accordance with Section 3.5.14.
References	Document ID MCS-1465.00-00-0008 Rev. 14 [App. A.1; Section E.3.b] - Design Basis Specification for Fire Protection PT/0/A/4400/001C Rev. 061 - Fire Protection System Monthly Test		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.10 Gaseous Fire Suppression Systems.	N/A	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.10.1 [Gaseous Suppression System Code Requirements]	3.10.1 If an automatic total flooding and local application gaseous fire suppression system is required to meet the performance or deterministic requirements of Chapter 4, then the system shall be designed and installed in accordance with the following applicable NFPA codes: (1) NFPA 12, Standard on Carbon Dioxide Extinguishing Systems (2) NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems (3) NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems	Complies via use of EEEE	MNS does not use fixed Carbon Dioxide Extinguishing or Clean Agent Fire Extinguishing Systems. Each of the Turbine Driven Auxiliary Feedwater Pumps and the Emergency Diesel Generators are protected with an automatic Halon 1301 suppression system. The Halon systems have been evaluated in accordance with NFPA 12A. The MNS Code of Record is NFPA 12A, 1977 edition.
References	**Document ID** MCC-1435.00-00-0030 Rev. 0 - NFPA 12A Code Conformance Review - Diesel Generator Room MCC-1435.00-00-0031 Rev. 0 - NFPA 12A Code Conformance Review - Turbine Driven Auxiliary Feedwater Pump Room MCS-1465.00-00-0008 Rev. 14 [Section 4.1.3.8.2; App. A.1, Section E.5] - Design Basis Specification for Fire Protection		
3.10.2 [Gaseous Suppression System Alarm Location]	3.10.2 Operation of gaseous fire suppression systems shall annunciate and alarm in the control room or other constantly attended location identified.	Comply	The MNS Halon 1301 systems are actuated manually or automatically. Activation of systems annunciate and alarm in the Control Room.
References	**Document ID** MCS-1599.RF-00-0001 Rev. 23 [Section 3.4.3] - Design Basis Specification for the RF/RY System		
3.10.3 [Gaseous Suppression System Ventilation Limitations]	3.10.3 Ventilation system design shall take into account prevention from over-pressurization during agent injection, adequate sealing to prevent loss of agent, and confinement of radioactive contaminants.	Complies via Use of EEEE	The ventilation systems automatically shutdown and dampers close upon initiation of the Halon system. Sealing is provided to prevent loss of agent. There is no radiological contamination in the areas of these systems.
References	**Document ID** MCC-1435.00-00-0030 Rev. 0 - NFPA 12A Code Conformance Review - Diesel Generator Room MCC-1435.00-00-0031 Rev. 0 - NFPA 12A Code Conformance Review - Turbine Driven Auxiliary Feedwater Pump Room McGuire Nuclear Station Fire Strategies - MCS-1599.RF-00-0001 Rev. 23 [Section 3.1.2.1.2] - Design Basis Specification for the RF/RY System		
3.10.4 [Gaseous Suppression System Single Failure Limits]	3.10.4* In any area required to be protected by both primary and backup gaseous fire suppression systems, a single active failure or a crack in any pipe in the fire suppression system shall not impair both the primary and backup fire suppression capability.	N/A	The primary gaseous fire suppression systems are not provided with backup gaseous fire suppression systems at MNS. Fire hose stations are available as a backup fire suppression feature.
References	**Document ID**		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
	MCS-1465.00-00-0008 Rev. 14 [App. A.1; Section E.3, E.4] - Design Basis Specification for Fire Protection MCS-1599.RF-00-0001 Rev. 23 [Section 3.1] - Design Basis Specification for the RF/RY System		
3.10.5 [Gaseous Suppression System Disarming Controls]	3.10.5 Provisions for locally disarming automatic gaseous suppression systems shall be secured and under strict administrative control.	Comply	Documented administrative procedures are in place for locally disarming automatic gaseous suppression systems.
References	**Document ID** OP/0/A/6400/002B Rev. 017 - Halon Fire Protection System		
3.10.6 [Gaseous Suppression System CO2 Limitations]	3.10.6* Total flooding carbon dioxide systems shall not be used in normally occupied areas.	N/A	MNS does not utilize total flooding carbon dioxide systems.
3.10.7 [Gaseous Suppression System CO2 Warnings]	3.10.7 Automatic total flooding carbon dioxide systems shall be equipped with an audible pre-discharge alarm and discharge delay sufficient to permit egress of personnel. The carbon dioxide system shall be provided with an odorizer.	N/A	MNS does not utilize total flooding carbon dioxide systems.
3.10.8 [Gaseous Suppression System CO2 Required Disarming]	3.10.8 Positive mechanical means shall be provided to lock out total flooding carbon dioxide systems during work in the protected space.	N/A	MNS does not utilize total flooding carbon dioxide systems.
3.10.9 [Gaseous Suppression System Cooling Considerations]	3.10.9 The possibility of secondary thermal shock (cooling) damage shall be considered during the design of any gaseous fire suppression system, but particularly with carbon dioxide.	Comply	Systems and equipment are located a sufficient distance from the Halon 1301 discharge points to prevent thermal shock upon contact with the vaporizing liquid.
References	**Document ID** MCC-1435.00-00-0030 Rev. 0 - NFPA 12A Code Conformance Review - Diesel Generator Room MCC-1435.00-00-0031 Rev. 0 - NFPA 12A Code Conformance Review - Turbine Driven Auxiliary Feedwater Pump Room NFPA 12A - Halon 1301 Fire Extinguishing Systems 2009 Edition		
3.10.10 [Gaseous Suppression System Decomposition Issues]	3.10.10 Particular attention shall be given to corrosive characteristics of agent decomposition products on safety systems.	Comply	Halon 1301 in the applications and concentrations used at MNS does not present a concern on safety systems.
References	**Document ID** Fire Protection Handbook, 20th Edition, Section 17/Chapter 6 - Halogenated Agents and Systems		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.11 Passive Fire Protection Features	3.11 Passive Fire Protection Features. This section shall be used to determine the design and installation requirements for passive protection features. Passive fire protection features include wall, ceiling, and floor assemblies, fire doors, fire dampers, and through fire barrier penetration seals. Passive fire protection features also include electrical raceway fire barrier systems (ERFBS) that are provided to protect cables and electrical components and equipment from the effects of fire.	N/A	N/A - Section Heading, see sub-sections for any specific compliance statements
3.11.1 Building Separation.	3.11.1 Building Separation. Each major building within the power block shall be separated from the others by barriers having a designated fire resistance rating of 3 hours or by open space of at least 50 ft (15.2 m) or space that meets the requirements of NFPA 80A, Recommended Practice for Protection of Buildings from Exterior Fire Exposures. Exception: Where a performance-based analysis determines the adequacy of building separation, the requirements of 3.11.1 shall not apply.	Comply	The major buildings within the power block are separated by qualified three-hour fire barriers or evaluated as equivalent. Major buildings include Turbine Buildings, Service Building, Auxiliary Building, Reactor Buildings, Fuel Pool Buildings, SSF, Discharge Structure, and Intake Structure.
References	**Document ID** MCS-1465.00-00-0008 Rev. 14 - Design Basis Specification for Fire Protection		
		Complies via Use of EEEE	Separation between the Turbine Buildings and the Service Building is documented via engineering evaluation.
References	**Document ID** MCC-1435.03-00-0014, Att. 06 Rev. 1 - GL 86-10 Evaluation of Unrated fire barrier between Service Building and Unit 1 and Unit 2 Turbine Building (FA SRV to FA TB1 and to FA TB2)		
3.11.2 Fire Barriers.	3.11.2 Fire Barriers. Fire barriers required by Chapter 4 shall include a specific fire-resistance rating. Fire barriers shall be designed and installed to meet the specific fire resistance rating using assemblies qualified by fire tests. The qualification fire tests shall be in accordance with NFPA 251, Standard Methods of Tests of Fire Endurance of Building Construction and Materials, or ASTM E 119, Standard Test Methods for Fire Tests of Building Construction and Materials.	Complies with previous NRC Approval	Fire barriers are generally three-hour fire rated construction. Certain deviations were approved by the NRC. Fire barrier deviations from Appendix R criteria are addressed, with technical justification, in a letter from Duke to the NRC dated August 3, 1984. Deviations include steel penetrating fire barriers, penetrations through the Reactor Building walls, unrated door hardware, and cork expansion joints between the Auxiliary Building and the Reactor Building. Each deviation is addressed with a technical justification. The NRC later found the deviations addressed in the August 3, 1984 letter to be acceptable. In a letter to Duke Power dated May 15, 1989 the NRC states: "By letter of August 3, 1984, you identified and justified four deviations of the McGuire Fire Protection Program from Section III.G of Appendix R to 10 CFR 50. The deviations are in regards to (1) the Auxiliary Building at elevations 716 and 733 feet, (2) wall penetrations for the Reactor Buildings, (3) fire boundary doors with security hardware, and (4) seismic expansion joints for the Auxiliary, Diesel Generator and Reactor Buildings. The NRC, with technical assistance from

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
			Franklin Research Center has reviewed these deviations and finds them to be acceptable." The barrier separating FAs 19 and 20 (Unit 1 and 2 Cable Rooms is less than 3 hours. A 1/8/1981 NRR Memo to Duke stated "A second concern in the I&E report was with the fire resistance rating not being a full three hours for the duct shaft walls and cable spreading room. The duct shaft and cable spreading room walls were fire tested by the ASTM E-119 fire test method. We have reviewed the test results and determined the fire resistance to be in excess of two hours. We have also reviewed the areas around the direct shaft walls and the cable spreading room for existing fuel load, safety related equipment, fire detection systems in the area, the fire suppression capability, and conclude that a two-hour fire rating is adequate for the wall assembly. Therefore, we find the two hour fire rated walls to be acceptable for these areas." NRC SER, Supplement 5, April 1981, found the wall to be an acceptable barrier given the criteria above and the installation of a fire proofed angle iron at the ceiling of the wall separating Unit 1 and Unit 2 cable rooms. The angle iron has been installed. In a letter dated 09-30-1980, the NRC identified the walls enclosing the duct shafts next to the cable spreading rooms are not of three hour fire rated construction and it is probable that this deficiency exist in other areas of the plant. Duke responded 10-24-1980 stating the duct shaft walls of concern were not provided with gypsum inside the duct shaft. Duke believes this configuration is functionally equivalent since the duct shaft walls need only prevent fire from entering the duct shaft from one fire area and exiting the duct shaft into another fire area. For a fire to follow this path would require burning through six layers of gypsum as was tested. The NRC found Duke's response acceptable in a memo dated 01-08-1981. The letter stated, "We reviewed this existing situation and determined that no fire rating is required inside of the duct shaft. Therefore, we find the applicant's design approach of providing fire resistance on only the exterior side of the shaft wall to be acceptable." There have been no changes to invalidate the basis for these approvals.
References	Document ID		
	1980-09-30 NRC Letter - IR 50-369/80-25 & -370/60-15 -		
	1980-10-24 DPC Letter to NRC - Response to IR 50-369/80-25 & -370/80-15		
	1981-01-08 NRC Memo - McGuire Nuclear Facility, I&E Notice of Deviation, Fire Protection		
	1984-08-03 Duke Letter - McGuire Nuclear Station Docket Nos. 50-369, 50-370		
	1989-05-15 NRC Letter - Reply to Duke Response, Fire Protection Deviations, McGuire Nuclear Station, Units 1 and 2		
	NRC SER No. 5 dated April 1981 - Safety Evaluation Report Supplement No.5		

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
		Complies via Use of EEEE	Separation between specific fire areas has been evaluated in attachments to the referenced calculation.
References	Document ID		
	MCC-1435.03-00-0014 Rev. 5 - Generic Letter 86-10 Evaluations for Fire Protection Features		
		Complies	Rated fire barriers are provide between fire areas unless otherwise previously approved by the NRC or evaluated as equivalent. Fire barriers are generally three-hour rated construction.
References	Document ID		
	MCS-1465.00-00-0008 Rev. 14 [App. A.1; Section D.1.j; App. A.2] - Design Basis Specification for Fire Protection		
3.11.3 Fire Barrier Penetrations.	3.11.3* Fire Barrier Penetrations. Penetrations in fire barriers shall be provided with listed fire-rated door assemblies or listed rated fire dampers having a fire resistance rating consistent with the designated fire resistance rating of the barrier as determined by the performance requirements established by Chapter 4. (See 3.11.3.4 for penetration seals for through penetration fire stops.) Passive fire protection devices such as doors and dampers shall conform with the following NFPA standards, as applicable: (1) NFPA 80, Standard for Fire Doors and Fire Windows (2) NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems (3) NFPA 101, Life Safety Code Exception: Where fire area boundaries are not wall-to-wall, floor-to-ceiling boundaries with all penetrations sealed to the fire rating required of the boundaries, a performance-based analysis shall be required to assess the adequacy of fire barrier forming the fire boundary to determine if the barrier will withstand the fire effects of the hazards in the area. Openings in fire barriers shall be permitted to be protected by other means as acceptable to the AHJ.	Complies with previous NRC Approval	Fire barriers penetrations are generally provided with three hour fire rated fire door assemblies or fire rated dampers. Certain deviations were approved by the NRC. Supplement 2 to the 1978 NRC Safety Evaluation Report states: "The applicant has committed to making all improvements prior to initial fuel loading of Unit 1 with the following exceptions which will be implemented prior to commercial operation of Unit 1: (3) Fire doors and dampers installed in penetrations in room 807 and 820 on elevation 750 feet of the auxiliary building which are adjacent to safety related equipment area. (4) Fire doors, dampers and the 1 1/2 hour rated ceilings for the peripheral rooms within the control complex. We have reviewed the applicant's schedule and find it acceptable. In summary, the fire protection system modifications to be completed by commercial operation as well as the... the barriers between fire areas... provide adequate protection from the adverse effects of a fire during the interim period prior to installation and operation of the Safe Shutdown System (SSS). We find that the Fire Protection Program for the McGuire Nuclear Plant with the improvements already made and those being made by the licensee is adequate for the present and, with the scheduled SSS, will meet the guidelines contained in Appendix A to Branch Technical Position 9.5-1 and meets General Design Criterion 3 and is, therefore, acceptable." In additon, the NRC Safety Evaluation Report Supplement 2, fire doors were not installed on the 3 hour barriers of the Residual Heat Removal Pump Rooms. Due to Duke agreeing to extend sprinkler coverage the NRC has concluded that the appropriate fire protection has been provided and is acceptable. Original text from the NRC Safety Evaluation Report Supplement 2: "There are no fire doors installed on the three-hour fire barriers of each Residual Heat Removal pump rooms. Access for manual fire fighting is very limited by two open spiral stairways from the

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
			level above. At our request, the applicant has agreed to extend the sprinkler system in each Residual Heat Removal pump room to cover the adjacent corridor area where an exposure fire may occur and threaten the Residual Heat Removal pumps. We have reviewed the applicant's Fire Hazards Analysis for the Residual Heat Removal pump rooms and conclude that appropriate fire protection has been provided and is acceptable." The Reactor Building HVAC penetrations and personnel access portals do not meet the three-hour rated barrier criteria. The NRC concluded in a letter to Duke dated 5/15/89 that "it is concluded that the existing reactor building penetrations for the process piping, spare sleeves, HVAC ducts, and personnel access portals are equivalent to a 3-hour fire rated penetration seal and/or are sufficient to withstand the expected fire severity with considerable conservatism. Therefore, the omission of standard designed fire tested penetration seals in these areas is an acceptable deviation from Section III.G.2.a of Appendix R." There have been no changes to invalidate the basis for these approvals.
References	Document ID 1989-05-15 NRC Letter - Reply to Duke Response, Fire Protection Deviations, McGuire Nuclear Station, Units 1 and 2 NRC SER No. 2 dated March 1, 1979 [Att. D; Section V.D, VIII] - Safety Evaluation Report Supplement 2		
		Complies via Use of EEEE	Fire doors and fire dampers have been evaluated in accordance with NFPA 80 and NFPA 90A. The MNS Code of Record for NFPA 80 is the 2007 edition and the Code of Record for NFPA 90A is the 1978 edition.
References	Document ID MCC-1435.00-00-0038 Rev. 0 - NFPA 80 Code Conformance Review MCC-1435.00-00-0039 Rev. 0 - NFPA 90A Code Conformance Review		
		Complies with Clarification	NFPA 101, Section 8.2.3.2.1(a) with regards to rated fire door assemblies refers to NFPA 80. NFPA 101, Section 9.2.1. with regards to rated fire dampers refers to NFPA 90A. Therefore compliance with NFPA 101 is achieves compliance with NFPA 101 via the NFPA 80 and 90A code conformance reviews.

Attachment A

NEI 04-02 Table B-1 Transition of Fundamental Fire Protection Program & Design Elements

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
3.11.4 Through Penetration Fire Stops.	3.11.4* Through Penetration Fire Stops. Through penetration fire stops for penetrations such as pipes, conduits, bus ducts, cables, wires, pneumatic tubes and ducts, and similar building service equipment that pass through fire barriers shall be protected as follows. (a) The annular space between the penetrating item and the through opening in the fire barrier shall be filled with a qualified fire-resistive penetration seal assembly capable of maintaining the fire resistance of the fire barrier. The assembly shall be qualified by tests in accordance with a fire test protocol acceptable to the AHJ or be protected by a listed fire-rated device for the specified fire-resistive period. (b) Conduits shall be provided with an internal fire seal that has an equivalent fire-resistive rating to that of the fire barrier through opening fire stop and shall be permitted to be installed on either side of the barrier in a location that is as close to the barrier as possible. Exception: Openings inside conduit 4 in. (10.2 cm) or less in diameter shall be sealed at the fire barrier with a fire-rated internal seal unless the conduit extends greater than 5 ft (1.5 m) on each side of the fire barrier. In this case the conduit opening shall be provided with noncombustible material to prevent the passage of smoke and hot gases. The fill depth of the material packed to a depth of 2 in. (5.1 cm) shall constitute an acceptable smoke and hot gas seal in this application.	Complies via Use of EEEE	MNS penetration seals comply with the typical details except where identified in MCC-1435.03-00-0010, "McGuire Nuclear Station Fire Barrier Penetration Seal Safety Analysis." This document analyzes non-conforming fire barrier penetration seals in the regulatory commitment program. Barriers include those separating safety from non-safety related areas or containment from non-containment areas, the Control Complex from the remainder of the plant, and post fire safe shutdown equipment.
References	**Document ID** MCC-1435.03-00-0010 Rev. 0 - McGuire Nuclear Station Fire Barrier Penetration Seal Safety Analysis		
		Comply	(a) MNS penetration seals comply with typical details as documented in MCS-1435.00-00-0003, "Design Specification for Mechanical and Electrical Penetration Fire, Flood, and Pressure Seals." The purpose of penetration seals, location of required penetration seals, designs, and installation procedures are documented in this specification. (b) MNS internal conduit seals comply with the exception to this section.
References	**Document ID** MCS-1435.00-00-0003 Rev. 7 - Design Specification for Mechacnical and Electrical Penetration Fire, Flood and Pressure Seals		
		Complies with previous NRC Approval	There are unprotected cable tray hangers and steel supports that penetrate fire barriers in the Auxiliary Building, Elevations 716 and 733 Feet (Fire Areas 2, 2A, 3, 3A, 4, and 14). These penetrations are not provided with a traditional seal as the barrier (wall) is formed around the penetrants. The NRC concluded in a letter to Duke dated 5/15/89 that "The staff has determined that the unprotected steel cable tray and pipe supports/restraints that penetrate fire barriers in the above-mentioned fire areas would not significantly upgrade the level of fire protection if they were provided with a fire rated wrap.

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
			Based on the evaluation, the staff concludes that existing fire protection features and the availability of a dedicated safe shutdown system provide a level of fire protection equivalent to the technical requirements of Section III.G.2.c of Appendix R. Therefore, the deviation identified is acceptable." The Reactor Building process piping penetrations and spare sleeves do not meet the three-hour rated barrier criteria. The NRC concluded in a letter to Duke dated 5/15/89 that "it is concluded that the existing reactor building penetrations for the process piping, spare sleeves, HVAC ducts, and personnel access portals are equivalent to a 3-hour fire rated penetration seal and/or are sufficient to withstand the expected fire severity with considerable conservatism. Therefore, the omission of standard designed fire tested penetration seals in these areas is an acceptable deviation from Section III.G.2.a of Appendix R." There have been no changes to invalidate the basis for these approvals.
References	**Document ID** 1989-05-15 NRC Letter - Reply to Duke Response, Fire Protection Deviations, McGuire Nuclear Station, Units 1 and 2		
3.11.5 Electrical Raceway Fire Barrier Systems (ERFBS).	3.11.5* Electrical Raceway Fire Barrier Systems (ERFBS). ERFBS required by Chapter 4 shall be capable of resisting the fire effects of the hazards in the area. ERFBS shall be tested in accordance with and shall meet the acceptance criteria of NRC Generic Letter 86-10, Supplement 1, "Fire Endurance Test Acceptance Criteria for Fire Barrier Systems Used to Separate Safe Shutdown Trains Within the Same Fire Area." The ERFBS needs to adequately address the design requirements and limitations of supports and intervening items and their impact on the fire barrier system rating. The fire barrier system's ability to maintain the required nuclear safety circuits free of fire damage for a specific thermal exposure, barrier design, raceway size and type, cable size, fill, and type shall be demonstrated. Exception No. 1: When the temperatures inside the fire barrier system exceed the maximum temperature allowed by the acceptance criteria of Generic Letter 86-10, "Fire Endurance Acceptance Test Criteria for Fire Barrier Systems Used to Separate Redundant Safe Shutdown Training Within the Same Fire Area," Supplement 1, functionality of the cable at these elevated temperatures shall be demonstrated. Qualification demonstration of these cables shall be performed in accordance with the electrical testing requirements of Generic Letter 86-10, Supplement 1, Attachment 1, "Attachment Methods for Demonstrating Functionality of Cables Protected by Raceway Fire Barrier Systems During and After Fire Endurance Test Exposure." Exception No. 2: ERFBS systems employed prior to the issuance of	Complies with previous NRC Approval	MNS does not utilize any Electrical Raceway Fire Barrier Systems such as Thermo-Lag, 3M Interam, Hemyc, MT, or Darmatt systems for Chapter 4 compliance. The NRC previously approved the use of Meggitt Safety Systems Cable in Fire Area 11 (now Fire Area 9-11) in a letter dated 1/13/2003. The Meggitt Safety Systems Cable is not specifically an ERFBS but it will be addressed under this section due to its design function and qualification testing using the test methods and acceptance criteria the same as an ERFBS. The NRC concluded "The NRC staff finds that the licensee has adequately demonstrated that the protection provided by the silicon dioxide insulated cable in this specific application is equivalent to the protection provided by a 3-hour rated fire barrier. Accordingly, the deviation from the approved fire protection program commitments to 10 CFR Part 50, Appendix R, Section III.G.2, with respect to having a three hour rated fire barrier, in these particular circumstances for Fire Area 11, provides an equivalent level of protection necessary to achieve the underlying purpose of the rule. Based on the NRC staff's review, as described above, the NRC staff concludes that the licensee's identified deviation from its fire protection program as it incorporates Section III.G.2 of Appendix R to 10 CFR Part 50, with respect to the enclosure of cables of one redundant train of safe shutdown equipment in a 3-hour fire rated barrier, is a

NFPA 805 Ch. 3 Reference	Requirements / Guidance	Compliance Statement	Compliance Basis
	Generic Letter 86-10, Supplement 1, are acceptable providing that the system successfully met the limiting end point temperature requirements as specified by the AHJ at the time of acceptance.		change to the approved fire protection program that does not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. Therefore, this deviation does not require prior approval of the Commission under Paragraph 2.C.4 of Facility Operating License No. NPF-9." There have been no changes to invalidate the basis for this approval.

B. NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

103 Pages Attached

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

A comprehensive list of systems and equipment and their interrelationships to be analyzed for a fire event shall be developed. The equipment list shall contain an inventory of those critical components required to achieve the nuclear safety performance criteria of Section 1.5. Components required to achieve and maintain the nuclear safety functions and components whose fire-induced failure could prevent the operation or result in the maloperation of those components needed to meet the nuclear safety criteria shall be included. Availability and reliability of equipment selected shall be evaluated.

NEI 00-01 Ref.
3 Deterministic Methodology

NEI 00-01 Guidance
This section discusses a generic deterministic methodology and criteria that licensees can use to perform a post-fire safe shutdown analysis to address regulatory requirements. The plant-specific analysis approved by NRC is reflected in the plant's licensing basis. The methodology described in this section is also an acceptable method of performing a post-fire safe shutdown analysis. This methodology is indicated in Figure 3-1. Other methods acceptable to NRC may also be used. Regardless of the method selected by an individual licensee, the criteria and assumptions provided in this guidance document may apply. The methodology described in Section 3 is based on a computer database oriented approach, which is utilized by several licensees to model Appendix R data relationships. This guidance document, however, does not require the use of a computer database oriented approach. The requirements of Appendix R Sections III.G.1, III.G.2 and III.G.3 apply to equipment and cables required for achieving and maintaining safe shutdown in any fire area. Although equipment and cables for fire detection and suppression systems, communications systems and 8-hour emergency lighting systems are important features, this guidance document does not address them. Additional information is provided in Appendix B to this document.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
The subsequent B-2 sections and paragraphs from revision 0 of this calculation presented a line by line comparison of NEI 00-01, revision 1 to the deterministic methodology used by McGuire to determine if the Nuclear Safety Performance Criteria are being met for maintaining the fuel in a safe and stable conditon for all modes and plant configurations. In general, McGuire conforms to NEI 00-01, revision 1 with the few exceptions noted in the individual paragraph or section comparisons. Reg. Guide 1.205, revision 1 initially was to endorse NEI 00-01 revision 1 but the NRC subsequently revised the Reg. Guide prior to issue to endorse NEI 00-01 revision 2. A 'Gap Analysis' was performed in this calculation which documents conformance to revision 2 of NEI 00-01. Any exceptions are noted in the individual paragraph or section comparisons.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1 [A, Intro] Safe Shutdown Systems and Path Development

NEI 00-01 Guidance
This section discusses the identification of systems available and necessary to perform the required safe shutdown functions. It also provides information on the process for combining these systems into safe shutdown paths. Appendix R Section III.G.1.a requires that the capability to achieve and maintain hot shutdown be free of fire damage. It is expected that the term "free of fire damage" will be further clarified in a forthcoming Regulatory Issue Summary. Appendix R Section III.G.1.b requires that repairs to systems and equipment necessary to achieve and maintain cold shutdown be completed within 72 hours. It is the intent of the NRC that requirements related to the use of manual operator actions will be addressed in a forthcoming rulemaking.

[Refer to hard copy of NEI 00-01 for Figure 3-1]

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Systems, functions and success paths are identified. Logic diagrams are utilized to determine if sufficient functions are available to achieve nuclear safety performance criteria.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Comments
A safe shutdown path may consist of a composite of other trains (e.g. a composite/complement of A and B trains).

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1 [B, Goals] Safe Shutdown Systems and Path Development

NEI 00-01 Guidance
The goal of post-fire safe shutdown is to assure that a one train of shutdown systems, structures, and components remains free of fire damage for a single fire in any single plant fire area. This goal is accomplished by determining those functions important to achieve and maintain hot shutdown. Safe shutdown systems are selected so that the capability to perform these required functions is a part of each safe shutdown path. The functions important to post-fire safe shutdown generally include, but are not limited to the following:

Reactivity control

Pressure control systems

Inventory control systems

Decay heat removal systems

Process monitoring

Support systems

- Electrical systems
- Cooling systems

These functions are of importance because they have a direct bearing on the safe shutdown goal of being able to achieve and maintain hot shutdown which ensures the integrity of the fuel, the reactor pressure vessel, and the primary containment. If these functions are preserved, then the plant will be safe because the fuel, the reactor and the primary containment will not be damaged. By assuring that this equipment is not damaged and remains functional, the protection of the health and safety of the public is assured.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Nuclear safety performance criteria are translated into success paths and are identified and utilized to ensure safe and stable conditions can be achieved and maintained. Logic diagrams are used to assess success paths.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1 [C, Spurious Operations] Safe Shutdown Systems and Path Development

NEI 00-01 Guidance
In addition to the above listed functions, Generic Letter 81-12 specifies consideration of associated circuits with the potential for spurious equipment operation and/or loss of power source, and the common enclosure failures. Spurious operations/actuations can affect the accomplishment of the post-fire safe shutdown functions listed above. Typical examples of the effects of the spurious operations of concern are the following:

- A loss of reactor pressure vessel/reactor coolant inventory in excess of the safe shutdown makeup capability.
- A flow loss or blockage in the inventory makeup or decay heat removal systems being used for the required safe shutdown path.

Spurious operations are of concern because they have the potential to directly affect the ability to achieve and maintain hot shutdown, which could affect the fuel and cause damage to the reactor pressure vessel or the primary containment. Common power source and common enclosure concerns could also affect these and must be addressed.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Spurious operations are considered in both the selection of nuclear safety performance criteria functions and systems as well as the cabling associated with the components relied upon to achieve those functions. A special subset of components considered for spurious operation involves reactor coolant pressure boundary components whose spurious operation can lead to an unacceptable loss of reactor pressure vessel / Reactor Coolant System inventory via an interfacing system loss of coolant accident. These components are defined as high/low pressure interface valves and are subject to more stringent circuit analysis. For McGuire Nuclear Station the high/low pressure interfaces consist solely of interface with the residual heat removal system in accordance with NUREG 0422 Supplement 6 as defined in c.3.2.

Section C.3 of NEI 00-01 Rev. 2 further clarifies the criterion for the determination of a high-low pressure interface valve:

"A valve whose spurious opening could result in a loss of RPV/RCS inventory and, due to the lower pressure rating on the downstream piping, an interfacing LOCA outside of Primary Containment (i.e., pipe rupture in the low pressure piping)."

Based on the above McGuire aligns with the intent of NEI 00-01 Rev. 2.

Reference
MCC-1435.00-00-0023 Rev. 1 - NFPA Transition Expert Panel Report for Addressing Potential McGuire Multiple Spurious Operations

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance	
3.1.1 Criteria / Assumptions	The following criteria and assumptions may be considered when identifying systems available and necessary to perform the required safe shutdown functions and combining these systems into safe shutdown paths.	
Applicability		
Applicable		
Alignment Statement	**Alignment Basis**	**Reference**
Not Applicable	Generic paragraph. Detailed alignment discussed in subsequent reference paragraphs.	

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.1.1 [GE BWR Paths]	[BWR] GE Report GE-NE-T43-00002-00-01-R01 entitled "Original Safe Shutdown Paths For The BWR" addresses the systems and equipment originally designed into the GE boiling water reactors (BWRs) in the 1960s and 1970s, that can be used to achieve and maintain safe shutdown per Section III.G.1 of 10CFR 50, Appendix R. Any of the shutdown paths (methods) described in this report are considered to be acceptable methods for achieving redundant safe shutdown.

Applicability
Not Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	McGuire is a PWR.	

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.1.2 [SRVs / LP Systems]	[BWR] GE Report GE-NE-T43-00002-00-03-R01 provides a discussion on the BWR Owners' Group (BWROG) position regarding the use of Safety Relief Valves (SRVs) and low pressure systems (LPCI/CS) for safe shutdown. The BWROG position is that the use of SRVs and low pressure systems is an acceptable methodology for achieving redundant safe shutdown in accordance with the requirements of 10CFR50 Appendix R Sections III.G.1 and III.G.2. The NRC has accepted the BWROG position and issued an SER dated Dec. 12, 2000.

Applicability
Not Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	McGuire Nuclear Station is a PWR.	

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.1.3 [Pressurizer Heaters]	[PWR] Generic Letter 86-10, Enclosure 2, Section 5.3.5 specifies that hot shutdown can be maintained without the use of pressurizer heaters (i.e., pressure control is provided by controlling the makeup/charging pumps). Hot shutdown conditions can be maintained via natural circulation of the RCS through the steam generators. The cooldown rate must be controlled to prevent the formation of a bubble in the reactor head. Therefore, feedwater (either auxiliary or emergency) flow rates as well as steam release must be controlled.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns with intent	McGuire does not rely on pressurizer heaters for fire areas where the safe and stable strategy does not use the Standby Shutdown Facility (SSF). For Fire Areas that require the use of the SSF, one sub-bank of pressurizer heaters are available for NC system pressure control to aid the NC system operation within prescribed pressure-temperature limits to minimize void formation within the reactor vessel and to maintain steam bubble in the pressurizer. Due to the high desirability of pressurizer heaters to assist in pressure control, the pressurizer heaters are analyzed as required in the deterministic analysis.Steam release rates and auxiliary feedwater flow rates are controlled to prevent formation of a bubble in the reactor head for all fire scenarios.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.1.4 [Alternative Shutdown Capability]

NEI 00-01 Guidance
The classification of shutdown capability as alternative shutdown is made independent of the selection of systems used for shutdown. Alternative shutdown capability is determined based on an inability to assure the availability of a redundant safe shutdown path. Compliance to the separation requirements of Sections III.G.1 and III.G.2 may be supplemented by the use of manual actions to the extent allowed by the regulations and the licensing basis of the plant, repairs (cold shutdown only), exemptions, deviations, GL 86-10 fire hazards analyses or fire protection design change evaluations, as appropriate. These may also be used in conjunction with alternative shutdown capability.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
McGuire utilizes a dedicated Standby Shutdown Facility (SSF) for fires in areas where both trains of equipment relied on to meet the nuclear safety performance criteria may be damaged or the control room may have to be evacuated. The transfer of control to the SSF isolates redundant systems and equipment from the affects of a fire. The intent of the guidance is that dedicated cables and equipment relied on for alternative shutdown are independent of the fire area of concern. Following transfer of control to the SSF, the dedicated equipment relied on to meet the nuclear performance goals via the SSF meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.1.5 [Initial Conditions]	At the onset of the postulated fire, all safe shutdown systems (including applicable redundant trains) are assumed operable and available for post-fire safe shutdown. Systems are assumed to be operational with no repairs, maintenance, testing, Limiting Conditions for Operation, etc. in progress. The units are assumed to be operating at full power under normal conditions and normal lineups.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	The same initial conditions are assumed by the McGuire Safe Shutdown Analysis.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.1.6 [Other Events in Conjunction with Fire]	No Final Safety Analysis Report accidents or other design basis events (e.g. loss of coolant accident, earthquake), single failures or non-fire induced transients need be considered in conjunction with the fire.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	No accidents or other design basis events (i.e. loss of coolant accident, control rod misalignment accident, etc.), single failures or non-fire induced transients are considered in conjunction with the fire.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.1.7 [Offsite Power]

NEI 00-01 Guidance
For the case of redundant shutdown, offsite power may be credited if demonstrated to be free of fire damage. Offsite power should be assumed to remain available for those cases where its availability may adversely impact safety (i.e., reliance cannot be placed on fire causing a loss of offsite power if the consequences of offsite power availability are more severe than its presumed loss). No credit should be taken for a fire causing a loss of offsite power. For areas where train separation cannot be achieved and alternative shutdown capability is necessary, shutdown must be demonstrated both where offsite power is available and where offsite power is not available for 72 hours.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
McGuire does not rely on offsite power for redundant safe shutdown. Emergency diesel generators are relied upon for electrical power. Offsite power has not been analyzed or demonstrated to be free of fire damage for redundant shutdown. The cascading power supply analysis determines fire impact to relied on power sources and is utilized in the analysis of fire areas for safe shutdown. This analysis ensures power is available to operate relied upon safe shutdown equipment. Power supply/cable failures are analyzed for effects of loss with and without offsite power. For alternate shutdown, a dedicated diesel generator is provided independent of emergency diesel generator systems that can supply the necessary electrical power for Hot Standby. Since McGuire does not rely on offsite power, it is not required to demonstrate it is free of fire damage. Thus, McGuire meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.1.8 [Safety-Related Equipment]

NEI 00-01 Guidance
Post-fire safe shutdown systems and components are not required to be safety-related.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Relied upon safe shutdown components at McGuire are not always safety related. Most are safety related due to their emergency functions are similar to fire safe shutdown required functions. Also, safety related components may be used and aligned to non-safety power supplies in alternate shutdown strategies. When safety components are aligned to non-safety power, the swap is performed via a locked key action to fully separate the two power sources.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.1.9 [72 Hour Coping]

NEI 00-01 Guidance
The post-fire safe shutdown analysis assumes a 72-hour coping period starting with a reactor scram/trip. Fire-induced impacts that provide no adverse consequences to hot shutdown within this 72-hour period need not be included in the post-fire safe shutdown analysis. At least one train can be repaired or made operable within 72 hours using onsite capability to achieve cold shutdown.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
NFPA 805 does not have any explicit requirements to achieve cold shutdown within 72 hours; therefore, the NFPA 805 criteria for nuclear safety performance criteria have been applied to ensure the fuel is maintained safe and stable. The previous hot and cold shutdown references for equipment were retained in the SSD database.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.1.10 [Manual / Automatic Initiation of Systems]

NEI 00-01 Guidance
Manual initiation from the main control room or emergency control stations of systems required to achieve and maintain safe shutdown is acceptable where permitted by current regulations or approved by NRC; automatic initiation of systems selected for safe shutdown is not required but may be included as an option.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
McGuire does not rely on the automatic initiation of systems for safe shutdown. Systems will be manually initiated from the control room or emergency control stations. The SSF is an alternate shutdown location and when required, the standby shutdown system (SSS) will be manually initiated with the SSF as the control center for SSS operation.

Gap Analysis: NEI 00-01 Revision 2 added additional guidance that automatic logic may be credited if the additional cables and equipment is included in the analysis; it also stated the automatic actuation due to fire damage should be evaluated. As stated above, McGuire does not rely on automatic initiation but evaluated for fire-induced spurious actuation of equipment.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance	
3.1.1.11 [Multiple Affected Units]	Where a single fire can impact more than one unit of a multi-unit plant, the ability to achieve and maintain safe shutdown for each affected unit must be demonstrated.	
Applicability		
Applicable		
Alignment Statement	**Alignment Basis**	**Reference**
Aligns with intent	Fire impacts at the component level have been evaluated for each unit separately and for both units collectively where required.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.2 Shutdown Functions	The following discussion on each of these shutdown functions provides guidance for selecting the systems and equipment required for safe shutdown. For additional information on BWR system selection, refer to GE Report GE-NE-T43-00002-00-01-R01 entitled "Original Safe Shutdown Paths for the BWR."

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.2.1 Reactivity Control

NEI 00-01 Guidance
[BWR] Control Rod Drive System
The safe shutdown performance and design requirements for the reactivity control function can be met without automatic scram/trip capability. Manual scram/reactor trip is credited. The post-fire safe shutdown analysis must only provide the capability to manually scram/trip the reactor.

[PWR] Makeup/Charging
There must be a method for ensuring that adequate shutdown margin is maintained by ensuring borated water is utilized for RCS makeup/charging.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
To achieve and maintain safe and stable conditions using normal shutdown trains A or B, borated water from the FWST using charging pumps is used to maintain shutdown margin. Also, the Boric Acid Tank (BAT) may be used.

To achieve and maintain safe and stable conditions utilizing SSF, borated water from the SFP via the standby makeup pump is used to maintain shutdown margin. Minimum boron concentration in the SFP and FWST has been calculated to ensure shutdown margins.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.2.2 Pressure Control Systems

NEI 00-01 Guidance
The systems discussed in this section are examples of systems that can be used for pressure control. This does not restrict the use of other systems for this purpose.

[BWR] Safety Relief Valves (SRVs)
The SRVs are opened to maintain hot shutdown conditions or to depressurize the vessel to allow injection using low pressure systems. These are operated manually. Automatic initiation of the Automatic Depressurization System is not a required function.

[PWR] Makeup/Charging
RCS pressure is controlled by controlling the rate of charging/makeup to the RCS. Although utilization of the pressurizer heaters and/or auxiliary spray reduces operator burden, neither component is required to provide adequate pressure control. Pressure reductions are made by allowing the RCS to cool/shrink, thus reducing pressurizer level/pressure. Pressure increases are made by initiating charging/makeup to maintain pressurizer level/pressure. Manual control of the related pumps is acceptable.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	To achieve and maintain safe and stable conditions via control room, McGuire relies on the use of makeup/charging to control reactor coolant (NC) pressure at hot standby conditions. To achieve and maintain safe and stable conditions via SSF, McGuire relies on the use of makeup/charging to control NC pressure at hot standby conditions. One sub-bank of pressurizer heaters are available for NC system pressure control to aid the NC system operation within prescribed pressure-temperature limits to minimize void formation within the reactor vessel and to maintain steam bubble in the pressurizer. Due to the high desirability of pressurizer heaters to assist in pressure control, the pressurizer heaters are analyzed as required in the deterministic analysis. For either CR or SSF stations, the NC PORVs, NC PORV Block valves, Reactor head vents, NC spray valves are analyzed / evaluated in the NC pressure control function. The NC Safety valves are not actively depended upon.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.2.3 Inventory Control

NEI 00-01 Guidance
[BWR] Systems selected for the inventory control function should be capable of supplying sufficient reactor coolant to achieve and maintain hot shutdown. Manual initiation of these systems is acceptable. Automatic initiation functions are not required.

[PWR]: Systems selected for the inventory control function should be capable of maintaining level to achieve and maintain hot shutdown. Typically, the same components providing inventory control are capable of providing pressure control. Manual initiation of these systems is acceptable. Automatic initiation functions are not required.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	Reactor makeup from the control room relies on normal makeup/charging using the FWST to maintain inventory. Reactor makeup from the SSF relies on the standby makeup pump using the SFP to maintain inventory. Gap Analysis: NEI 00-01 Revision 2 added additional guidance that automatic actuation due to fire damage should be evaluated. McGuire evaluated for fire-induced spurious actuation of equipment.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.2.4 Decay Heat Removal	[BWR] Systems selected for the decay heat removal function(s) should be capable of: • Removing sufficient decay heat from primary containment, to prevent containment over-pressurization and failure. • Satisfying the net positive suction head requirements of any safe shutdown systems taking suction from the containment (suppression pool). • Removing sufficient decay heat from the reactor to achieve cold shutdown. [PWR] Systems selected for the decay heat removal function(s) should be capable of: • Removing sufficient decay heat from the reactor to reach hot shutdown conditions. Typically, this entails utilizing natural circulation in lieu of forced circulation via the reactor coolant pumps and controlling steam release via the atmospheric dump valves. • Removing sufficient decay heat from the reactor to reach cold shutdown conditions. This does not restrict the use of other systems.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns with intent	To achieve and maintain safe and stable conditions via control room decay heat removal during hot standby conditions is provided by natural circulation of the reactor coolant through credited steam generators utilizing the main steam safeties and/or steam PORVs with condensate makeup using motor driven auxiliary feedwater pumps (MDCAP). To achieve and maintain safe and stable conditions via SSF decay heat removal during hot standby conditions of the NCS is provided by natural circulation of the NCS through relied upon main steam safeties and makeup using the turbine driven auxiliary feedwater pump (TDCAP). NFPA 805 does not have any explicit requirements to achieve cold shutdown, therefore the NFPA 805 criteria for the Nuclear Safety Performance Criteria have been applied to ensure the fuel is maintained in a safe and stable condition.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.2.5 Process Monitoring

NEI 00-01 Guidance
The process monitoring function is provided for all safe shutdown paths. IN 84-09, Attachment 1, Section IX "Lessons Learned from NRC Inspections of Fire Protection Safe Shutdown Systems (10CFR50 Appendix R)" provides guidance on the instrumentation acceptable to and preferred by the NRC for meeting the process monitoring function. This instrumentation is that which monitors the process variables necessary to perform and control the functions specified in Appendix R Section III.L.1. Such instrumentation must be demonstrated to remain unaffected by the fire. The IN 84-09 list of process monitoring is applied to alternative shutdown (III.G.3). IN 84-09 did not identify specific instruments for process monitoring to be applied to redundant shutdown (III.G.1 and III.G.2). In general, process monitoring instruments similar to those listed below are needed to successfully use existing operating procedures (including Abnormal Operating Procedures).

BWR

- Reactor coolant level and pressure
- Suppression pool level and temperature
- Emergency or isolation condenser level
- Diagnostic instrumentation for safe shutdown systems
- Level indication for tanks needed for safe shutdown

PWR

- Reactor coolant temperature (hot leg / cold leg)
- Pressurizer pressure and level
- Neutron flux monitoring (source range)
- Level indication for tanks needed for safe shutdown
- Steam generator level and pressure
- Diagnostic instrumentation for safe shutdown systems

The specific instruments required may be based on operator preference, safe shutdown procedural guidance strategy (symptomatic vs. prescriptive), and systems and paths selected for safe shutdown.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
To achieve and maintain safe and stable conditions via the control room sufficient instrumentation channels remain available to provide all of the necessary monitoring requirements.

To achieve and maintain safe and stable conditions via the SSF, dedicated channels of instrumentation are available to provide all of the necessary monitoring requirements. The SSF does not require Source Range instrumentation since the SBMUP can only take suction from the borated SFP.

Th and Tc requirements may be met with core exit TCs and SM pressure indication for either normal or alternate shutdown trains.

Reference
1983-07-21 NRC Letter to Duke - Standby Shutdown System - Source Range Neutron Flux Instrumentation (McGuire Nuclear Station, Units 1 and 2)
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)
MCS-1223.SS-00-0001 Rev. 22 - Design Basis Specification for the Standby Shutdown System

Comments
Some monitoring parameters may be found not available in the control room for A Train Switchgear HVAC room fires. For these areas, SSF instrumentation is available to provide the necessary monitoring.

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.2.6 Support Systems	[Blank Heading - No specific guidance]

Applicability
Not Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.2.6.1 Electrical Systems

NEI 00-01 Guidance
AC Distribution System Power for the Appendix R safe shutdown equipment is typically provided by a medium voltage system such as 4.16 KV Class 1E busses either directly from the busses or through step down transformers/load centers/distribution panels for 600, 480 or 120 VAC loads. For redundant safe shutdown performed in accordance with the requirements of Appendix R Section III.G.1 and 2, power may be supplied from either offsite power sources or the emergency diesel generator depending on which has been demonstrated to be free of fire damage. No credit should be taken for a fire causing a loss of offsite power. Refer to Section 3.1.1.7. DC Distribution System Typically, the 125VDC distribution system supplies DC control power to various 125VDC control panels including switchgear breaker controls. The 125VDC distribution panels may also supply power to the 120VAC distribution panels via static inverters. These distribution panels typically supply power for instrumentation necessary to complete the process monitoring functions. For fire events that result in an interruption of power to the AC electrical bus, the station batteries are necessary to supply any required control power during the interim time period required for the diesel generators to become operational. Once the diesels are operational, the 125 VDC distribution system can be powered from the diesels through the battery chargers. [BWR] Certain plants are also designed with a 250VDC Distribution System that supplies power to Reactor Core Isolation Cooling and/or High Pressure Coolant Injection equipment. The DC control centers may also supply power to various small horsepower Appendix R safe shutdown system valves and pumps. If the DC system is relied upon to support safe shutdown without battery chargers being available, it must be verified that sufficient battery capacity exists to support the necessary loads for sufficient time (either until power is restored, or the loads are no longer required to operate).

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	Sufficient power sources and distribution systems are available for a fire in any area. For fire areas where the SSF is the relied upon to meet the nuclear safety performance criteria, the SSF contains its own dedicated diesel generator and electrical distribution that remains free of fire damage.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.2.6.2 Cooling Systems [Main Section]

NEI 00-01 Guidance
Various cooling water systems may be required to support safe shutdown system operation, based on plant-specific considerations. Typical uses include:

- RHR/SDC/DH Heat Exchanger cooling water
- Safe shutdown pump cooling (seal coolers, oil coolers)
- Diesel generator cooling
- HVAC system cooling water

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Required cooling system components have been included in the SSEL. The cooling systems are capable of performing their design function and are not out of service or degraded at the onset of the fire. All fire areas have been shown to have sufficient cooling systems free of fire damage or SSF shutdown is used which has its own cooling systems necessary for safe shutdown. SSF facility has its own HVAC.

Gap Analysis: NEI 00-01 Revision 2 added additional guidance on the treatment of HVAC systems. This guidance included additional details on when HVAC systems are needed or if actions to open doors were acceptable alternatives to the HVAC systems. It also included additional details on considering the potential for adverse impacts to HVAC components due to direct fire affects or the affects of toxic conditions. The McGuire analysis performed considered this guidance in it's analysis.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.2.6.2 [A] Cooling Systems [HVAC]

NEI 00-01 Guidance
HVAC Systems HVAC Systems may be required to assure that safe shutdown equipment remains within its operating temperature range, as specified in manufacturer's literature or demonstrated by suitable test methods, and to assure protection for plant operations staff from the effects of fire (smoke, heat, toxic gases, and gaseous fire suppression agents). HVAC systems may be required to support safe shutdown system operation, based on plant-specific configurations. Typical uses include:

- Main control room, cable spreading room, relay room
- ECCS pump compartments
- Diesel generator rooms
- Switchgear rooms

Plant-specific evaluations are necessary to determine which HVAC systems are essential to safe shutdown equipment operation.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Required HVAC components have been included on the SSEL based on functional requirements. This includes cooling for the control room, cable room, and equipment rooms. The SSF has an independent HVAC system which provides cooling for the SSF and SSF equipment, including the diesel generator and switchgear rooms. If ventilation is lost for in plant switchgear rooms, the operators can open doors and hatches as necessary to provide ventilation and reduce room temperature for personnel access.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.3 Methodology for Shutdown System Selection	Refer to Figure 3-2 for a flowchart illustrating the various steps involved in selecting safe shutdown systems and developing the shutdown paths. The following methodology may be used to define the safe shutdown systems and paths for an Appendix R analysis: [Refer to hard copy of NEI 00-01 for Figure 3-2]

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.3.1 Identify safe shutdown functions	Review available documentation to obtain an understanding of the available plant systems and the functions required to achieve and maintain safe shutdown. Documents such as the following may be reviewed: • Operating Procedures (Normal, Emergency, Abnormal) • System descriptions • Fire Hazard Analysis • Single-line electrical diagrams • Piping and Instrumentation Diagrams (P&IDs) • [BWR] GE Report GE-NE-T43-00002-00-01-R02 entitled "Original Shutdown Paths for the BWR"

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	Functions, systems and components needed to satisfy the nuclear safety performance criteria were identified from available plant documentation.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.3.2 Identify Combinations of Systems that Satisfy Each Safe Shutdown Function	Given the criteria/assumptions defined in Section 3.1.1, identify the available combinations of systems capable of achieving the safe shutdown functions of reactivity control, pressure control, inventory control, decay heat removal, process monitoring, and support systems such as electrical and cooling systems (refer to Section 3.1.2). This selection process does not restrict the use of other systems. In addition to achieving the required safe shutdown functions, consider spurious operations and power supply issues that could impact the required safe shutdown function.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	Functions, systems and components needed to satisfy the nuclear safety performance criteria were selected using the criteria and assumptions of NEI 00-01, Sections 3.1.1 and 3.1.2. For a discussion of alignment with these two sections, see specific NEI 00-01 sections elsewhere in this document.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.1.3.3 Define Combinations of Systems for Each Safe Shutdown Path	Select combinations of systems with the capability of performing all of the required safe shutdown functions and designate this set of systems as a safe shutdown path. In many cases, safe shutdown paths may be defined on a divisional basis since the availability of electrical power and other support systems must be demonstrated for each path.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	Functions, systems and components needed to satisfy the nuclear safety performance criteria were identified and placed into safe shutdown logic diagrams to show success paths.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.1.3.4 Assign Shutdown Paths to Each Combination of Systems

NEI 00-01 Guidance
Assign a path designation to each combination of systems. The path will serve to document the combination of systems relied upon for safe shutdown in each fire area. Refer to Attachment 1 to this document (NEI 00-01) for an example of a table illustrating how to document the various combinations of systems for selected shutdown paths.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Logic diagrams were utilized to show success paths for the various nuclear safety performance functions. Success paths were designated for each system and nuclear safety performance criteria. The example in the attachment showed designating the equipment for 3 discrete safe shutdown success paths. McGuire did not assign a 'path designation' to each combination of systems or equipment, instead the logic diagrams provided numerous combinations of 'success paths' that could be used to achieve the nuclear safety performance goals. McGuire then relied upon one combination of success paths for each fire area. This meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.2 Safe Shutdown Equipment Selection

NEI 00-01 Guidance
The previous section described the methodology for selecting the systems and paths necessary to achieve and maintain safe shutdown for an exposure fire event (see Section 5.0 DEFINITIONS for "Exposure Fire"). This section describes the criteria/assumptions and selection methodology for identifying the specific safe shutdown equipment necessary for the systems to perform their Appendix R function. The selected equipment should be related back to the safe shutdown systems that they support and be assigned to the same safe shutdown path as that system. The list of safe shutdown equipment will then form the basis for identifying the cables necessary for the operation or that can cause the maloperation of the safe shutdown systems.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections. Gap Analysis: NEI 00-01 Revision 2 added additional guidance on classifying components as required for safe shutdown or important to safe shutdown as it dictates the tools available for mitigating the loss. This 'classification' is not applicable to NFPA 805 as it dictates how to evaluate for fire-induced impacts to cables and components. This 'additional guidance' appears in numerous other sections but will not be discussed further in the B-2 table.	

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.2.1 Criteria / Assumptions	Consider the following criteria and assumptions when identifying equipment necessary to perform the required safe shutdown functions:

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.2.1.1 [Primary Secondary Components]

NEI 00-01 Guidance
3.2.1.1 Safe shutdown equipment can be divided into two categories. Equipment may be categorized as (1) primary components or (2) secondary components. Typically, the following types of equipment are considered to be primary components:

- Pumps, motor operated valves, solenoid valves, fans, gas bottles, dampers, unit coolers, etc.
- All necessary process indicators and recorders (i.e., flow indicator, temperature indicator, turbine speed indicator, pressure indicator, level recorder)
- Power supplies or other electrical components that support operation of primary components (i.e., diesel generators, switchgear, motor control centers, load centers, power supplies, distribution panels, etc.).

Secondary components are typically items found within the circuitry for a primary component. These provide a supporting role to the overall circuit function. Some secondary components may provide an isolation function or a signal to a primary component via either an interlock or input signal processor. Examples of secondary components include flow switches, pressure switches, temperature switches, level switches, temperature elements, speed elements, transmitters, converters, controllers, transducers, signal conditioners, hand switches, relays, fuses and various instrumentation devices. Determine which equipment should be included on the Safe Shutdown Equipment List (SSEL). As an option, include secondary components with a primary component(s) that would be affected by fire damage to the secondary component. By doing this, the SSEL can be kept to a manageable size and the equipment included on the SSEL can be readily related to required post-fire safe shutdown systems and functions.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
The dividing of equipment into 2 categories approach was used at McGuire; 'primary' components were identified and added to the SSEL, 'secondary' components (referred to as subcomponents) were grouped together with the primary components. Although some subcomponents were not individually identified (i.e., relays, fuses, hand switches, etc), the cables which connected to the subcomponents were identified and assigned to the primary component. In some instances, components were not captured by the cable selection process but were captured within the cascading interlocks analysis as pseudo-components. The effects of fire on these pseudo components were evaluated where appropriate. McGuire aligns with the above guidance except the additional category of 'pseudo' components is used.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.2.1.2 [Fire Damage to Mechanical Components (not electrically supervised)]

NEI 00-01 Guidance
3.2.1.2 Assume that exposure fire damage to manual valves and piping does not adversely impact their ability to perform their pressure boundary or safe shutdown function (heat sensitive piping materials, including tubing with brazed or soldered joints, are not included in this assumption). Fire damage should be evaluated with respect to the ability to manually open or close the valve should this be necessary as a part of the post-fire safe shutdown scenario.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Safe shutdown analysis assumptions for post-fire integrity of mechanical components to function as pressure boundaries are essentially identical. No damage to packing or gaskets is assumed. The analysis assumes no damage to manual valves. The ability to manually operate valves post fire is evaluated in the manual action feasibility calculation, as necessary.

Gap Analysis: NEI 00-01 Revision 2 added additional guidance for evaluating for post-fire coefficient of friction for rising stem valves. Any post-fire manual operation of valves will be justified by an engineering evaluation as necessary in the "NFPA 805 Recovery Action Feasibility Review" calculation.

Reference
MCC-1435.00-00-0045 Rev. 0 - NFPA 805 Transition Recovery Action Feasibility Review
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.2.1.3 [Manual Valve Positions]

NEI 00-01 Guidance
Assume that manual valves are in their normal position as shown on P&IDs or in the plant operating procedures.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	Manual valves are assumed to be in their normal operating position from the operating procedures and other references (dwgs, etc.).	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.2.1.4 [Check Valves]	Assume that a check valve closes in the direction of potential flow diversion and seats properly with sufficient leak tightness to prevent flow diversion. Therefore, check valves do not adversely affect the flow rate capability of the safe shutdown systems being used for inventory control, decay heat removal, equipment cooling or other related safe shutdown functions.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	Safe Shutdown analysis for post-fire integrity of check valves uses this assumption.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.2.1.5 [Instrument Failures]	Instruments (e.g., resistance temperature detectors, thermocouples, pressure transmitters, and flow transmitters) are assumed to fail upscale, midscale, or downscale as a result of fire damage, whichever is worse. An instrument performing a control function is assumed to provide an undesired signal to the control circuit.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	Instruments are assumed to fail in the worst case providing an undesirable result.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.2.1.6 [Spurious Components]

NEI 00-01 Guidance
Identify equipment that could spuriously operate or mal-operate and impact the performance of equipment on a required safe shutdown path during the equipment selection phase. Consider Bin 1 of RIS 2004-03 during the equipment identification process.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Spurious operation was considered in identification of SSEL components. Conductor-to-conductor shorts within a multiconductor cable configurations were considered for power, control, and instrumentation circuits whose fire-induced failures could prevent operation of safe shutdown equipment or through maloperation cause a flow diversion, loss of coolant, or other scenario that could significantly impact the ability to achieve and maintain hot standby. All McGuire cable conductors used for control have thermoset insulation or are MI cable. Some instrumentation conductors use thermoplastic cables that are armored which would preclude cable-to-cable interactions. McGuire aligns with the intent of this guidance.

Reference
MCC-1435.00-00-0023 Rev. 1 - NFPA Transition Expert Panel Report for Addressing Potential McGuire Multiple Spurious Operations
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance	
3.2.1.7 [Instrument Tubing]	Identify instrument tubing that may cause subsequent effects on instrument readings or signals as a result of fire. Determine and consider the fire area location of the instrument tubing when evaluating the effects of fire damage to circuits and equipment in the fire area.	
Applicability Applicable		
Alignment Statement Aligns	**Alignment Basis** Instrument tubing has been included in the evaluation.	**Reference** MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.	NEI 00-01 Guidance
3.2.2 Methodology for Equipment Selection	Refer to Figure 3-3 for a flowchart illustrating the various steps involved in selecting safe shutdown equipment. Use the following methodology to select the safe shutdown equipment for a post-fire safe shutdown analysis: [Refer to hard copy of NEI 00-01 for Figure 3-3]

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.2.2.1 Identify the System Flow Path for Each Shutdown Path

NEI 00-01 Guidance
Mark up and annotate a P&ID to highlight the specific flow paths for each system in support of each shutdown path. Refer to Attachment 2 for an example of an annotated P&ID illustrating this concept.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
P&IDs were marked up and used to determine flow and diversion paths which were then translated into success path logic diagrams. These logic diagrams were then used to identify potential SSEL components. These P&ID drawings were not maintained as part of the safe shutdown analysis. Instead, McGuire summary flow diagrams were marked up and annotated to designate specific flow paths for each system. This approach meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.2.2.2 Identify the Equipment in Each Safe Shutdown System Flow Path Including Equipment That May Spuriously Operate and Affect System Operation

NEI 00-01 Guidance
Review the applicable documentation (e.g. P&IDs, electrical drawings, instrument loop diagrams) to assure that all equipment in each system's flow path has been identified. Assure that any equipment that could spuriously operate and adversely affect the desired system function(s) is also identified. If additional systems are identified which are necessary for the operation of the safe shutdown system under review, include these as systems required for safe shutdown. Designate these new systems with the same safe shutdown path as the primary safe shutdown system under review (Refer to Figure 3-1).

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
P&IDs and electrical one lines were marked up to determine flow and diversion paths for nuclear safety performance functions and to identify potential SSEL components including components that could spurious operate and affect the desired system function of relied upon equipment. Any additional success paths identified were defined on logic diagrams, however the technique of designating a set number of safe shutdown paths was not used. The McGuire approach of providing numerous success paths meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.2.2.3 Develop a List of Safe Shutdown Equipment and Assign the Corresponding System and Safe Shutdown Path(s) Designation to Each.

NEI 00-01 Guidance
Prepare a table listing the equipment identified for each system and the shutdown path that it supports. Identify any valves or other equipment that could spuriously operate and impact the operation of that safe shutdown system. Assign the safe shutdown path for the affected system to this equipment. During the cable selection phase, identify additional equipment required to support the safe shutdown function of the path (e.g., electrical distribution system equipment). Include this additional equipment in the safe shutdown equipment list. Attachment 3 to this document provides an example of a (SSEL). The SSEL identifies the list of equipment within the plant considered for safe shutdown and it documents various equipment-related attributes used in the analysis.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
P&IDs were marked up to determine flow and diversion paths for nuclear safety performance functions to identify potential SSEL components. Spurious operation of these components was included in the analysis. An iterative process was utilized to arrive at the final SSEL based on additional support components identified during the cable selection process (such as electrical distribution equipment). The table listing as identified in Attachment 3 was not utilized, since the SSD database has its own data entry format, which provides the necessary equipment information. Also, equipment was not assigned a safe shutdown path; instead logic diagrams denote system function success paths. The McGuire approach meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.2.2.4 Identify Equipment Information Required for the Safe Shutdown Analysis

NEI 00-01 Guidance
Collect additional equipment-related information necessary for performing the post-fire safe shutdown analysis for the equipment. In order to facilitate the analysis, tabulate this data for each piece of equipment on the SSEL. Refer to Attachment 3 to this document for an example of a SSEL. Examples of related equipment data should include the equipment type, equipment description, safe shutdown system, safe shutdown path, drawing reference, fire area, fire zone, and room location of equipment. Other information such as the following may be useful in performing the safe shutdown analysis: normal position, hot shutdown position, cold shutdown position, failed air position, failed electrical position, high/low pressure interface concern, and spurious operation concern.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Plant design information on the equipment that is relied on to meet nuclear safety performance criteria was collected to the extent necessary to identify potential SSEL components including components required to be analyzed due to spurious operation concerns. An iterative process was utilized to arrive at the final SSEL based on additional support components identified during the cable selection process and review of plant design basis information. The required equipment information listed in Attachment 3 to NEI 00-01 is contained within the SSD database except for 'safe shutdown path' and 'room location'. Equipment at McGuire was not assigned a safe shutdown path; instead logic diagrams denote system function success paths. The SSD database includes fire area location for the equipment but does not include room locations. All examples of data listed are not required to perform a safe shutdown analysis. The McGuire approach meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.1 Nuclear Safety Capability System and Equipment Selection

NEI 00-01 Ref.
3.2.2.5 Identify Dependencies Between Equipment, Supporting Equipment, Safe Shutdown Systems and Safe Shutdown Paths.

NEI 00-01 Guidance
In the process of defining equipment and cables for safe shutdown, identify additional supporting equipment such as electrical power and interlocked equipment. As an aid in assessing identified impacts to safe shutdown, consider modeling the dependency between equipment within each safe shutdown path either in a relational database or in the form of a Safe Shutdown Logic Diagram (SSLD). Attachment 4 provides an example of a SSLD that may be developed to document these relationships.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Logic diagrams were utilized to assess the dependencies of equipment and systems on the ability to achieve the nuclear safety performance criteria. Cascading power supply and cascading interlock analyses were developed to support this effort. Attachment 4 of NEI 00-01 was used in this effort.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

2.4.2.2.1 Circuits Required in Nuclear Safety Functions. Circuits required for the nuclear safety functions shall be identified. This includes circuits that are required for operation, that could prevent the operation, or that result in the maloperation of the equipment identified in 2.4.2.1. This evaluation shall consider fire-induced failure modes such as hot shorts (external and internal), open circuits, and shorts to ground, to identify circuits that are required to support the proper operation of components required to achieve the nuclear safety performance criteria, including spurious operation and signals. This will ensure that a comprehensive population of circuitry is evaluated.

2.4.2.2.2 Other Required Circuits. Other circuits that share common power supply and/or common enclosure with circuits required to achieve nuclear safety performance criteria shall be evaluated for their impact on the ability to achieve nuclear safety performance criteria.

(a)Common Power Supply Circuits. Those circuits whose fire-induced failure could cause the loss of a power supply required to achieve the nuclear safety performance criteria shall be identified. This situation could occur if the upstream protection device (i.e., breaker or fuse) is not properly coordinated with the downstream protection device.

(b)Common Enclosure Circuits. Those circuits that share enclosures with circuits required to achieve the nuclear safety performance criteria and whose fire-induced failure could cause the loss of the required components shall be identified. The concern is that the effects of a fire can extend outside of the immediate fire area due to fire-induced electrical faults on inadequately protected cables or via inadequately sealed fire area boundaries.

NEI 00-01 Ref.	NEI 00-01 Guidance
3.3 Safe Shutdown Cable Selection and Location	This section provides industry guidance on the recommended methodology and criteria for selecting safe shutdown cables and determining their potential impact on equipment required for achieving and maintaining safe shutdown of an operating nuclear power plant for the condition of an exposure fire. The Appendix R safe shutdown cable selection criteria are developed to ensure that all cables that could affect the proper operation or that could cause the maloperation of safe shutdown equipment are identified and that these cables are properly related to the safe shutdown equipment whose functionality they could affect. Through this cable-to-equipment relationship, cables become part of the safe shutdown path assigned to the equipment affected by the cable.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	*NEI 00-01 Guidance*
3.3.1 Criteria / Assumptions	To identify an impact to safe shutdown equipment based on cable routing, the equipment must have cables that affect it identified. Carefully consider how cables are related to safe shutdown equipment so that impacts from these cables can be properly assessed in terms of their ultimate impact on safe shutdown system equipment. Consider the following criteria when selecting cables that impact safe shutdown equipment:

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	*Generic paragraph - alignment described in specific sections.*	

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.3.1.1 [Cable Selection]

NEI 00-01 Guidance
The list of cables whose failure could impact the operation of a piece of safe shutdown equipment includes more than those cables connected to the equipment. The relationship between cable and affected equipment is based on a review of the electrical or elementary wiring diagrams. To assure that all cables that could affect the operation of the safe shutdown equipment are identified, investigate the power, control, instrumentation, interlock, and equipment status indication cables related to the equipment. Consider reviewing additional schematic diagrams to identify additional cables for interlocked circuits that also need to be considered for their impact on the ability of the equipment to operate as required in support of post-fire safe shutdown. As an option, consider applying the screening criteria from Section 3.5 as a part of this section. For an example of this see Section 3.3.1.4.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
The cables were selected using the component's electrical elementary diagram as a guide and performing a point to point review of the associated connection diagrams. During the cable selection process, a circuit fault analysis for each safe shutdown component was not initially performed. This made the initial compliance analysis bounding. Further analysis to determine the effects of a fire induced hot short, open circuit and short to ground as applicable was performed during the fire area compliance assessment task. Component interlocks affecting operation were either specifically identified, routed, and incorporated into the component's function, or alternatively, the interlock can be analyzed to show acceptability for operation in either state during analysis and thus its cabling, routing etc. is not required.

Gap Analysis: NEI 00-01 Revision 2 added section 3.3.1.1.6 which provided guidance on performing an exclusionary analysis to demonstrate a lack of potential for any impacts to post-fire safe shutdown from a component or group of components regardless of cable routing. This approach was not used at McGuire.

Reference
5970161-001 - AREVA NP Inc., McGuire Nuclear Station Project Instruction for Appendix R Fire Safe Shutdown Analysis
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.3.1.2 [Cables Affecting Multiple Components]

NEI 00-01 Guidance
In cases where the failure (including spurious actuations) of a single cable could impact more than one piece of safe shutdown equipment, include the cable with each piece of safe shutdown equipment.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
For control logic circuits where multiple components receive signals from common control logic, the control logic was analyzed as a primary component and a pseudo component was created for the logic with cables selected accordingly. This same methodology was used for similar circuit scenarios such as common power supplies. Whereas this approach does not assign the cable to each individual component, the effects on each component due to fire damage was evaluated. This meets the intent of the guidance.

Reference
5970161-001 - AREVA NP Inc., McGuire Nuclear Station Project Instruction for Appendix R Fire Safe Shutdown Analysis
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.3.1.3 [Isolation Devices]

NEI 00-01 Guidance
Electrical devices such as relays, switches and signal resistor units are considered to be acceptable isolation devices. In the case of instrument loops, review the isolation capabilities of the devices in the loop to determine that an acceptable isolation device has been installed at each point where the loop must be isolated so that a fault would not impact the performance of the safe shutdown instrument function.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
The cables were selected using the component's electrical elementary diagram as a guide. A point to point review of the associated connection diagrams and/or wire tabulations was performed to identify all associated circuits. This includes instrument loops. All circuits/cables that are electrically connected to the circuit under analysis were identified up to a credited isolation device. This meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.3.1.4 [Identify "Not Required" Cables]	Screen out cables for circuits that do not impact the safe shutdown function of a component (i.e., annunciator circuits, space heater circuits and computer input circuits) unless some reliance on these circuits is necessary. However, they must be isolated from the component's control scheme in such a way that a cable fault would not impact the performance of the circuit.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	The cables were selected using the component's electrical elementary diagram as a guide and by performing a point to point review of the associated connection diagrams. During the cable selection process, a circuit fault analysis for each safe shutdown component was performed. Cables associated with outputs from auxiliary contacts to computer points, annunciators or motor heaters were excluded from cable selection when it was concluded that the cable failure will not impact the primary component. Motor heaters are not considered required functions. Motor heaters that use the same power as controls (e.g. MOV) were included.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.3.1.5 [Identification of Power Supplies]

NEI 00-01 Guidance
For each circuit requiring power to perform its safe shutdown function, identify the cable supplying power to each safe shutdown and/or required interlock component. Initially, identify only the power cables from the immediate upstream power source for these interlocked circuits and components (i.e., the closest power supply, load center or motor control center). Review further the electrical distribution system to capture the remaining equipment from the electrical power distribution system necessary to support delivery of power from either the offsite power source or the emergency diesel generators (i.e., onsite power source) to the safe shutdown equipment. Add this equipment to the safe shutdown equipment list. Evaluate the power cables for this additional equipment for associated circuits concerns.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
During the cable selection process, power supplies and interlocks were identified. The cascading power supplies, pseudo-components created for power supply interlocks and the cascading interlocks all serve to identify required power supplies and their interconnections and dependencies to ensure relied on components are supplied with electrical power.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.3.1.6 [Auto Initiation Logic]

NEI 00-01 Guidance
The automatic initiation logics for the credited post-fire safe shutdown systems are not required to support safe shutdown. Each system can be controlled manually by operator actuation in the main control room or emergency control station. If operator actions outside the MCR are necessary, those actions must conform to the regulatory requirements on manual actions. However, if not protected from the effects of fire, the fire-induced failure of automatic initiation logic circuits must not adversely affect any post-fire safe shutdown system function.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Automatic initiation logic was not relied on for performance of functions. Manual operation of components from the Main Control Room, SSF or locally were identified during the fire area compliance assessment task as needed. To preclude adverse impact from automatic initiation logic circuits or control logic circuits where multiple components receive signals from common control logic, the control logic was analyzed as a primary component and a pseudo component was created for the logic with cables selected accordingly. This same methodology was used for similar circuit scenarios such as common power supplies. In this way the effects of a fire induced failure causing spurious component operation were fully evaluated. Variances from the Deterministic Requirements of NFPA 805, Section 4.2.3 (VFDRs) were identified and evaluated in Fire Risk Evaluations (FREs) to assess the impact of the variances and any required recovery actions.

The cables were selected using the component's electrical elementary diagram as a guide and performing a point to point review of the associated connection diagrams. During the cable selection process, a circuit fault analysis for each safe shutdown component was not initially performed. This made the initial compliance analysis bounding. Further analysis to determine the effects of a fire induced hot short, open circuit and short to ground as applicable was performed during the fire area compliance assessment task. Component interlocks affecting operation were either specifically identified, routed, and incorporated into the component's function and analyzed, or, alternatively the interlock can be analyzed to show acceptability for operation in either state during analysis and thus its cabling, routing etc. is not required. This approach analyzes automatic actuation as component interlocks.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.3.1.7 [Circuit Coordination]	Cabling for the electrical distribution system is a concern for those breakers that feed associated circuits and are not fully coordinated with upstream breakers. With respect to electrical distribution cabling, two types of cable associations exist. For safe shutdown considerations, the direct power feed to a primary safe shutdown component is associated with the primary component. For example, the power feed to a pump is necessary to support the pump. Similarly, the power feed from the load center to an MCC supports the MCC. However, for cases where sufficient branch-circuit coordination is not provided, the same cables discussed above would also support the power supply. For example, the power feed to the pump discussed above would support the bus from which it is fed because, for the case of a common power source analysis, the concern is the loss of the upstream power source and not the connected load. Similarly, the cable feeding the MCC from the load center would also be necessary to support the load center.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns with intent	McGuire has completed a breaker coordination calculation to address coordination concerns. Concerns/coordination issues identified during the analysis were dispositioned similar to other identified concerns; e.g., analytical dispositioning, creating a VFDR, modification, etc.	MCC-1381.05-00-0335 / AREVA calc. 32-9043224-001 Rev. 1 - McGuire Nuclear Station Appendix R NFPA 805 Coordination Study

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.3.2 Associated Circuit Cables	Appendix R, Section III.G.2, requires that separation features be provided for equipment and cables, including associated nonsafety circuits that could prevent operation or cause maloperation due to hot shorts, open circuits, or shorts to ground, of redundant trains of systems necessary to achieve hot shutdown. The three types of associated circuits were identified in Reference 6.1.5 and further clarified in a NRC memorandum dated March 22, 1982 from R. Mattson to D. Eisenhut, Reference 6.1.6. They are as follows: • Spurious actuations • Common power source • Common enclosure

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.3.2 [A] Associated Circuit Cables - Cables Whose Failure May Cause Spurious Actuations	Safe shutdown system spurious actuation concerns can result from fire damage to a cable whose failure could cause the spurious actuation/mal-operation of equipment whose operation could affect safe shutdown. These cables are identified in Section 3.3.3 together with the remaining safe shutdown cables required to support control and operation of the equipment.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	This paragraph provides introductory information but contains no specific guidance for comparison. Discussion is provided in sub-section 3.3.3.2.	

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.3.2 [B] Associated Circuit Cables - Common Power Source Cables	The concern for the common power source associated circuits is the loss of a safe shutdown power source due to inadequate breaker/fuse coordination. In the case of a fire-induced cable failure on a non-safe shutdown load circuit supplied from the safe shutdown power source, a lack of coordination between the upstream supply breaker/fuse feeding the safe shutdown power source and the load breaker/fuse supplying the non-safe shutdown faulted circuit can result in loss of the safe shutdown bus. This would result in the loss of power to the safe shutdown equipment supplied from that power source preventing the safe shutdown equipment from performing its required safe shutdown function. Identify these cables together with the remaining safe shutdown cables required to support control and operation of the equipment. Refer to Section 3.5.2.4 for an acceptable methodology for analyzing the impact of these cables on post-fire safe shutdown.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	This paragraph provides introductory information but contains no specific guidance for comparison. Discussion is provided in sub-section 3.5.2.4.	

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.3.2 [C] Associated Circuit Cables - Common Enclosure Cables	The concern with common enclosure associated circuits is fire damage to a cable whose failure could propagate to other safe shutdown cables in the same enclosure either because the circuit is not properly protected by an isolation device (breaker/fuse) such that a fire-induced fault could result in ignition along its length, or by the fire propagating along the cable and into an adjacent fire area. This fire spread to an adjacent fire area could impact safe shutdown equipment in that fire area, thereby resulting in a condition that exceeds the criteria and assumptions of this methodology (i.e., multiple fires). Refer to Section 3.5.2.5 for an acceptable methodology for analyzing the impact of these cables on post-fire safe shutdown.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	This paragraph provides introductory information but contains no specific guidance for comparison. Discussion is provided in sub-section 3.5.2.5.	

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.3.3 Methodology for Cable Selection and Location	Refer to Figure 3-4 for a flowchart illustrating the various steps involved in selecting the cables necessary for performing a post-fire safe shutdown analysis. Use the following methodology to define the cables required for safe shutdown including cables that may cause associated circuits concerns for a post-fire safe shutdown analysis: [Refer to hard copy of NEI 00-01 for Figure 3-4]

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.3.3.1 Identify Circuits Required for the Operation of the Safe Shutdown Equipment

NEI 00-01 Guidance
For each piece of safe shutdown equipment defined in section 3.2, review the appropriate electrical diagrams including the following documentation to identify the circuits (power, control, instrumentation) required for operation or whose failure may impact the operation of each piece of equipment:

- Single-line electrical diagrams
- Elementary wiring diagrams
- Electrical connection diagrams
- Instrument loop diagrams.

For electrical power distribution equipment such as power supplies, identify any circuits whose failure may cause a coordination concern for the bus under evaluation. If power is required for the equipment, include the closest upstream power distribution source on the safe shutdown equipment list. Through the iterative process described in Figures 3-2 and 3-3, include the additional upstream power sources up to either the offsite or the emergency power source.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
The circuits were identified utilizing the single line, elementary, and connection diagrams along with instrument loop drawings. The iterative process of figures 3-2 and 3-3 of NEI 00-01 were used to include upstream power sources. For a given safe shutdown component, all cables that had the potential to impact the function of the component were initially identified to ensure that a bounding population of cables was provided for compliance analysis. Only those cables which were adequately isolated from the component such as those associated with certain indicating lights and computer inputs were excluded.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.3.3.2 Identify Interlocked Circuits and Cables Whose Spurious Operation or Maloperation Could Affect Shutdown

NEI 00-01 Guidance
In reviewing each control circuit, investigate interlocks that may lead to additional circuit schemes, cables and equipment. Assign to the equipment any cables for interlocked circuits that can affect the equipment.

While investigating the interlocked circuits, additional equipment or power sources may be discovered. Include these interlocked equipment or power sources in the safe shutdown equipment list (refer to Figure 3-3) if they can impact the operation of the equipment under consideration.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
For control logic circuits where multiple components receive signals from common control logic or interlocks, the control logic was analyzed as a primary component and a pseudo component was created on the SSEL for the logic with cables selected accordingly. Pseudo-components whose associated cabling can affect another primary component based on common power were identified in the cable selection for the affected component as an interlocked primary component. The cascading power supply and cascading interlocks analyses evaluate these interlocked components. The McGuire approach of assigning cables to 'pseudo' components instead of to the equipment under consideration meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.3.3.3 Assign Cables to the Safe Shutdown Equipment

NEI 00-01 Guidance
Given the criteria/assumptions defined in Section 3.3.1, identify the cables required to operate or that may result in maloperation of each piece of safe shutdown equipment.

Tabulate the list of cables potentially affecting each piece of equipment in a relational database including the respective drawing numbers, their revision and any interlocks that are investigated to determine their impact on the operation of the equipment. In certain cases, the same cable may support multiple pieces of equipment. Relate the cables to each piece of equipment, but not necessarily to each supporting secondary component.

If adequate coordination does not exist for a particular circuit, relate the power cable to the power source. This will ensure that the power source is identified as affected equipment in the fire areas where the cable may be damaged.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Cables associated with SSEL components were selected in accordance with Section 3.3.1 and entered into the safe shutdown database for that component. In some instances where cables affected multiple components, pseudo components were used and cables were assigned to them instead of the primary equipment. The safe shutdown database also contains the direct and indirect power supplies for the safe shutdown components and any interlocks that could impact component operation. SSEL component cables were also associated with interlocks and power supplies. A fault coordination analysis was performed. Where outright fault coordination did not exist, the related cabling was identified and routed and assigned a pseudo component number against the SSEL bus. During each specific Fire Area analysis, if these pseudo components surfaced against the SSEL bus as being required, subsequent analysis was performed utilizing source fault capabilities, cable impedance to the Fire Area being analyzed. The results were shown to be acceptable or captured as a conflict with subsequent resolutions. The McGuire approach meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.5 Circuit Analysis and Evaluation	This section on circuit analysis provides information on the potential impact of fire on circuits used to monitor, control and power safe shutdown equipment. Applying the circuit analysis criteria will lead to an understanding of how fire damage to the cables may affect the ability to achieve and maintain post-fire safe shutdown in a particular fire area. This section should be used in conjunction with Section 3.4, to evaluate the potential fire-induced impacts that require mitigation. Appendix R Section III.G.2 identifies the fire-induced circuit failure types that are to be evaluated for impact from exposure fires on safe shutdown equipment. Section III.G.2 of Appendix R requires consideration of hot shorts, shorts-to-ground and open circuits.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.5.1 Criteria / Assumptions	Apply the following criteria/assumptions when performing fire-induced circuit failure evaluations.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.5.1.1 [Circuit Failure Types and Impact]

NEI 00-01 Guidance
Consider the following circuit failure types on each conductor of each unprotected safe shutdown cable to determine the potential impact of a fire on the safe shutdown equipment associated with that conductor.

- A hot short may result from a fire-induced insulation breakdown between conductors of the same cable, a different cable or from some other external source resulting in a compatible but undesired impressed voltage or signal on a specific conductor. A hot short may cause a spurious operation of safe shutdown equipment.
- An open circuit may result from a fire-induced break in a conductor resulting in the loss of circuit continuity. An open circuit may prevent the ability to control or power the affected equipment. An open circuit may also result in a change of state for normally energized equipment. (e.g. [for BWRs] loss of power to the Main Steam Isolation Valve (MSIV) solenoid valves due to an open circuit will result in the closure of the MSIVs). Note that RIS 2004-03 indicates that open circuits, as an initial mode of cable failures, are considered to be of very low likelihood. The risk-informed inspection process will focus on failures with relatively high probabilities.
- A short-to-ground may result from a fire-induced breakdown of a cable insulation system, resulting in the potential on the conductor being applied to ground potential. A short-to-ground may have all of the same effects as an open circuit and, in addition, a short-to-ground may also cause an impact to the control circuit or power train of which it is a part.

Consider the three types of circuit failures identified above to occur individually on each conductor of each safe shutdown cable on the required safe shutdown path in the fire area.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
All combinations of circuit failures except Intercable hot shorts are considered and evaluated to determine if spurious component actuation can occur. Intercable hot shorts were not considered due to the use of armored cable at McGuire. The armor jacketing of the cables prevent conductors from one cable shorting to conductors of another cable. In some cases, circuit analysis did not have to be performed because the entire population of cables associated with a safe shutdown component was adequately separated as from redundant components and cabling. McGuire meets the intent of the guidance except cable-to-cable interactions were not considered because the armor jacketing of the cables preclude hot short interactions. Additionally cables which meet separation requirements are not postulated to fail, therefore performing circuit analysis was not required.

Gap Analysis: NEI 00-01 Revision 2 added additional guidance on circuit analysis, including the consideration of hot shorts that bypass the MOV protective devices (i.e. IN 92-18 damage). McGuire performed circuit analysis that evaluated for this condition.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.5.1.2 [Circuit Contacts and Operational Modes]

NEI 00-01 Guidance
Assume that circuit contacts are positioned (i.e., open or closed) consistent with the normal mode/position of the safe shutdown equipment as shown on the schematic drawings. The analyst must consider the position of the safe shutdown equipment for each specific shutdown scenario when determining the impact that fire damage to a particular circuit may have on the operation of the safe shutdown equipment.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Analysis assumes that circuit contacts are positioned (i.e., open or closed) consistent in the normal mode/position of the safe shutdown equipment as shown on the schematic drawings or defined by procedure.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.5.1.3 [Duration of Circuit Failures]

NEI 00-01 Guidance
Assume that circuit failure types resulting in spurious operations exist until action has been taken to isolate the given circuit from the fire area, or other actions have been taken to negate the effects of circuit failure that is causing the spurious actuation. The fire is not assumed to eventually clear the circuit fault. Note that RIS 2004-03 indicates that fire-induced hot shorts typically self-mitigate after a limited period of time.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Multiple fire induced failures and multiple spurious actuations were considered to occur concurrently in accordance with the guidance provided in NEI 00-01, Section 3.5.1.5[B]. This methodology is applied at the safe shutdown component level regardless of how many components that may share a common multi conductor cable. Based on this methodology, McGuire considers any and all potential spurious actuations that may result from intractable shorting, which may occur concurrently regardless of number. The fire was not assumed to eventually clear the circuit fault. All potential hot shorts always failed the equipment and no probability was used in the deterministic analysis. Details of faults were provided but credit was not taken to clear them. This meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.5.1.4 [Cable Failure Configurations]

NEI 00-01 Guidance
When both trains are in the same fire area outside of primary containment, all cables that do not meet the separation requirements of Section III.G.2 (NFPA 805 Section 4.2.3) are assumed to fail in their worst case configuration.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	All unprotected cables and equipment within the fire area that do not meet the separation requirements of Section III.G.2 (NFPA 805 Section 4.2.3) were assumed to fail in their worst case configuration.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.5.1.5 [A, Circuit Failure Risk Assessment Guidance]	The following guidance provides the NRC inspection focus from Bin 1 of RIS 2004-03 in order to identify any potential combinations of spurious operations with higher risk significance. Bin 1 failures should also be the focus of the analysis; however, NRC has indicated that other types of failures required by the regulations for analysis should not be disregarded even if in Bin 2 or 3. If Bin 1 changes in subsequent revisions of RIS 2004-03, the guidelines in the revised RIS should be followed.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.5.1.5 [B, Cable Failure Modes]

NEI 00-01 Guidance
For multiconductor cables testing has demonstrated that conductor-to-conductor shorting within the same cable is the most common mode of failure. This is often referred to as "intra-cable shorting." It is reasonable to assume that given damage, more than one conductor-to-conductor short will occur in a given cable. A second primary mode of cable failure is conductor-to-conductor shorting between separate cables, commonly referred to as "inter-cable shorting." Inter-cable shorting is less likely than intra-cable shorting. Consistent with the current knowledge of fire-induced cable failures, *the following configurations should be considered*:

A.For any individual multiconductor cable (thermoset or thermoplastic), any and all potential spurious actuations that may result from intra-cable shorting, including any possible combination of conductors within the cable, may be postulated to occur concurrently regardless of number. However, as a practical matter, the number of combinations of potential hot shorts increases rapidly with the number of conductors within a given cable. For example, a multiconductor cable with three conductors (3C) has 3 possible combinations of two (including desired combinations), while a five conductor cable (5C) has 10 possible combinations of two (including desired combinations), and a seven conductor cable (7C) has 21 possible combinations of two (including desired combinations). To facilitate an inspection that considers most of the risk presented by postulated hot shorts within a multiconductor cable, inspectors should consider only a few (three or four) of the most critical postulated combinations.

B.For any thermoplastic cable, any and all potential spurious actuations that may result from intra-cable and inter-cable shorting with other thermoplastic cables, including any possible combination of conductors within or between the cables, may be postulated to occur concurrently regardless of number. (The consideration of thermoset cable inter-cable shorts is deferred pending additional research.)

C.For cases involving the potential damage of more than one multiconductor cable, a maximum of two cables should be assumed to be damaged concurrently. *The spurious actuations should be evaluated as previously described. The consideration of more than two cables being damaged (and* subsequent spurious actuations) is deferred pending additional research.

D.For cases involving direct current (DC) circuits, the potential spurious operation due to failures of the associated control cables (even if the spurious operation requires two concurrent hot shorts of the proper polarity, e.g., plus-to-plus and minus-to-minus) should be considered when the required source and target conductors are each located within the same multiconductor cable.

E.Instrumentation Circuits. Required instrumentation circuits are beyond the scope of this associated circuit approach and must meet the same requirements as required power and control circuits. There is one case where an instrument circuit could potentially be considered an associated circuit. If fire-induced damage of an instrument circuit could prevent operation (e.g., lockout permissive signal) or cause maloperation (e.g., unwanted start/stop/reposition signal) of systems necessary to achieve and maintain hot shutdown, then the instrument circuit may be considered an associated circuit and handled accordingly.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
A. Three types of circuit failures (intra-cable hot shorts, open circuits and shorts-to-ground) were considered to occur on each conductor of each safe shutdown cable associated with a component of the required safe shutdown path in each given fire area. If a complete circuit failure analysis (e.g., interlocks) was not performed, a conservative worst-case failure was assumed with respect to the required SSD component/system.

B. McGuire has thermoplastic covering over its armored sheathing, but the conductor insulation is thermoset for control and power cables. Some instrumentation cabling has thermoplastic conductor insulation; however, these also have armored sheathing. Inter-cable hot shorts are not postulated.

C. No limit is placed on the number of cables damaged by the fire, however multiple spurious operation is being resolved by FAQ 07-0038.

D. DC circuit control cables are included in the analysis. The McGuire circuit

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

Alignment Statement	Alignment Basis	Reference
	analysis considers up to two concurrent hot shorts within multiconductor control cables and the consequences of the spurious operations generated. In general, for McGuire circuit configurations, this bounds the case where the spurious operation requires two concurrent hot shorts of the proper polarity, i.e., plus-to-plus and minus-to-minus. In the past, proper polarity hot shorts on ungrounded DC circuits were considered only in relation to high-low pressure interface components as described in GL 86-10, question 5.3.1, and these were postulated within a multiconductor cable or as a cable-to-cable hit. McGuire does not postulate cable-to-cable hot shorts due to the utilization of armor jacketed cables. Also, McGuire has no DC components which are considered high-low pressure interfaces. E. Instrument cables are included in the analysis and associated with pseudo components for logic circuits. McGuire aligns with this guidance except for item B. McGuire meets the intent of the item B guidance except cable-to-cable interactions were not considered because the armor jacketing of the cables preclude inter-cable hot short interactions.	

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.5.2 Types of Circuit Failures

NEI 00-01 Guidance
Appendix R requires that nuclear power plants must be designed to prevent exposure fires from defeating the ability to achieve and maintain post-fire safe shutdown. Fire damage to circuits that provide control and power to equipment on the required safe shutdown path and any other equipment whose spurious operation/mal-operation could affect shutdown in each fire area must be evaluated for the effects of a fire in that fire area. Only one fire at a time is assumed to occur. The extent of fire damage is assumed to be limited by the boundaries of the fire area. Given this set of conditions, it must be assured that one redundant train of equipment capable of achieving hot shutdown is free of fire damage for fires in every plant location. To provide this assurance, Appendix R requires that equipment and circuits required for safe shutdown be free of fire damage and that these circuits be designed for the fire-induced effects of a hot short, short-to-ground, and open circuit. With respect to the electrical distribution system, the issue of breaker coordination must also be addressed. This section will discuss specific examples of each of the following types of circuit failures:

- Open circuit
- Short-to-ground
- Hot short.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.5.2.1 Circuit Failures Due to an Open Circuit

NEI 00-01 Guidance
This section provides guidance for addressing the effects of an open circuit for safe shutdown equipment. An open circuit is a fire-induced break in a conductor resulting in the loss of circuit continuity. An open circuit will typically prevent the ability to control or power the affected equipment. An open circuit can also result in a change of state for normally energized equipment. For example, a loss of power to the main steam isolation valve (MSIV) solenoid valves [for BWRs] due to an open circuit will result in the closure of the MSIV.

NOTE: The EPRI circuit failure testing indicated that open circuits are not likely to be the initial fire-induced circuit failure mode. Consideration of this may be helpful within the safe shutdown analysis. Consider the following consequences in the safe shutdown circuit analysis when determining the effects of open circuits:

Loss of electrical continuity may occur within a conductor resulting in de-energizing the circuit and causing a loss of power to, or control of, the required safe shutdown equipment.

In selected cases, a loss of electrical continuity may result in loss of power to an interlocked relay or other device. This loss of power may change the state of the equipment. Evaluate this to,determine if equipment fails safe.

Open circuit on a high voltage (e.g., 4.16 kV) ammeter current transformer (CT) circuit may result in secondary damage.

Figure 3.5.2-1 shows an open circuit on a grounded control circuit.

[Refer to hard copy of NEI 00-01 for Figure 3.5.2-1]

Open circuit No. 1:
An open circuit at location No. 1 will prevent operation of the subject equipment.

Open circuit No. 2:
An open circuit at location No. 2 will prevent opening/starting of the subject equipment, but will not impact the ability to close/stop the equipment.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Open circuits are analyzed as shown on the referenced figures from NEI 00-01. Current transformers (CTs) may induce secondary fires through the fire-induced opening of circuitry associated with the secondary side windings of the CT. Where such circuitry exits in a fire area or provides a common enclosure concern within a fire area, the impact of such secondary fires was properly considered. The following information is being provided to demonstrate that metering and relaying circuits have been analyzed for the potentially adverse impact of fire damage, including, but not limited to open secondary CT windings:

- Cables associated to suspect secondary CT circuits (4 KV and above) are included in the cable selection of the associated buses as part of the cable selection performed for the EIR, PRA, and NPO required equipment.
- The cable routing for these circuits and fire areas that the raceways are located in are documented.
- The cable impacts for secondary CT circuits are evaluated on a Fire Area basis.

The following additional design features were considered:

- CT circuits which do not leave the fire area which contains power supply of

Reference
1984-06-27 NRC Memo, Power Systems Branch - Unresolved Technical Issue Concerning Alternative Safe Shutdown
PIP-07-1571 - Reportability

2.4.2.2 Nuclear Safety Capability Circuit Analysis

Alignment Statement	Alignment Basis	Reference
	concern were not required to be modeled. • CT circuits associated with switchgear feeders to motors, etc. stay within the fire area of the switchgear. • Transducers were considered an isolation device and further modeling of the transducer's secondary cables were not required. • CT circuits may provide input into transformer or generator differential circuits. Any imbalance or disturbance on these circuits was considered to isolate the protected device within a few cycles. These were considered to trip the respective feeder as a source of power, however there should be only a low likelihood of a secondary fire. • CTs wired in a delta configuration, versus that of a wye configuration, are not subject to failure due to an open circuit on external cables Any imbalance or disturbance on these circuits was considered to isolate the protected device within a few cycles. These were considered to trip the respective feeder as a source of power, however not to cause a secondary fire. The results from the analysis of the secondary CT circuits were used to demonstrate whether or not the redundant systems (i.e. SSF, Train A or Train B as credited) used to achieve and maintain safe and stable conditions were impacted by the failure of the secondary CT open circuit. The results from the analysis were also used to determine whether or not redundant system (i.e. SSF, Train A or Train B as credited) cables or components were located in the areas of the CT or secondary CT circuit routing. Impact concerns were documented as VFDRs, as necessary. This analysis satisfies the criteria of NFPA 805 and the guidance provided in NEI 00-01, Revision 1. Based on this information, McGuire meets the intent of this guidance. Gap Analysis: NEI 00-01 Revision 2 added additional guidance on the open circuit of a high voltage ammeter current transformer (CT) circuit. McGuire properly considered this additional guidance in their evaluations (see above).	

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.5.2.2 Circuit Failures Due to a Short-to-Ground [General]	This section provides guidance for addressing the effects of a short-to-ground on circuits for safe shutdown equipment. A short-to-ground is a fire-induced breakdown of a cable insulation system resulting in the potential on the conductor being applied to ground potential. A short-to-ground can cause a loss of power to or control of required safe shutdown equipment. In addition, a short-to-ground may affect other equipment in the electrical power distribution system in the cases where proper coordination does not exist. Consider the following consequences in the post-fire safe shutdown analysis when determining the effects of circuit failures related to shorts-to-ground: • A short to ground in a power or a control circuit may result in tripping one or more isolation devices (i.e. breaker/fuse) and causing a loss of power to or control of required safe shutdown equipment. • In the case of certain energized equipment such as HVAC dampers, a loss of control power may result in loss of power to an interlocked relay or other device that may cause one or more spurious operations.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.5.2.2 Circuit Failures Due to a Short-to-Ground [A, Grounded Circuits]

NEI 00-01 Guidance
This section provides guidance for addressing the effects of a short-to-ground on circuits for safe shutdown equipment. A short-to-ground is a fire-induced breakdown of a cable insulation system resulting in the potential on the conductor being applied to ground potential. A short-to-ground can cause a loss of power to or control of required safe shutdown equipment. In addition, a short-to-ground may affect other equipment in the electrical power distribution system in the cases where proper coordination does not exist.
Short-to-Ground on Grounded Circuits

Typically, in the case of a grounded circuit, a short-to-ground on any part of the circuit would present a concern for tripping the circuit isolation device thereby causing a loss of control power.

Figure 3.5.2-2 illustrates how a short-to-ground fault may impact a grounded circuit.

[Refer to hard copy of NEI 00-01 Rev. 1 for Figure 3.5.2-2]

Short-to-ground No. 1:
A short-to-ground at location No. 1 will result in the control power fuse blowing and a loss of power to the control circuit. This will result an inability to operate the equipment using the control switch. Depending on the coordination characteristics between the protective device on this circuit and upstream circuits, the power supply to other circuits could be affected.

Short-to-ground No. 2:
A short-to-ground at location No. 2 will have no effect on the circuit until the close/stop control switch is closed. Should this occur, the effect would be identical to that for the short-to-ground at location No. 1 described above. Should the open/start control switch be closed prior to closing the close/stop control switch, the equipment will still be able to be opened/started.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Certain cables were excluded if all postulated fire induced faults (open circuit, hot-short or short to ground) have no adverse consequences for the component. Fire Area analysis methodology assumes multiple fire induced failures. The analysis technique for Short-to-Ground for grounded circuits as shown in the referenced NEI 00-01 figures was utilized.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.5.2.2 Circuit Failures Due to a Short-to-Ground [B, Ungrounded Circuits]	Short-to-Ground on Ungrounded Circuits In the case of an ungrounded circuit, postulating only a single short-to-ground on any part of the circuit may not result in tripping the circuit isolation device. Another short-to-ground on the circuit or another circuit from the same source would need to exist to cause a loss of control power to the circuit. Figure 3.5.2-3 illustrates how a short to ground fault may impact an ungrounded circuit. [Refer to hard copy of NEI 00-01 Rev. 1 for Figure 3.5.2-3] Short-to-ground No. 1: A short-to-ground at location No. 1 will result in the control power fuse blowing *and a loss of power to the control circuit if short-to-ground No. 3 also exists either within the same circuit or on any other circuit fed from the same* power source. This will result in an inability to operate the equipment using the control switch. Depending on the coordination characteristics between the protective device on this circuit and upstream circuits, the power supply to other circuits could be affected. Short-to-ground No. 2: A short-to-ground at location No. 2 will have no effect on the circuit until the close/stop control switch is closed. Should this occur, the effect would be identical to that for the short-to-ground at location No. 1 described above. Should the open/start control switch be closed prior to closing the close/stop control switch, the equipment will still be able to be opened/started.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	The methodology assumes multiple fire induced failures including hot-shorts, shorts-to ground and open circuits. All postulated cable and component failures were identified utilizing the techniques of the referenced NEI 00-01 figures for ungrounded circuits. Gap Analysis: NEI 00-01 Revision 2 added additional guidance that there is no limit to the number of shorts-to-ground that could be caused by the fire and that these should be assumed to occur simultaneously unless justification was provided. As stated above, McGuire considered multiple fire induced failures, including shorts-to-ground.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.	NEI 00-01 Guidance
3.5.2.3 Circuit Failures Due to a Hot Short [General]	This section provides guidance for analyzing the effects of a hot short on circuits for required safe shutdown equipment. A hot short is defined as a fire-induced insulation breakdown between conductors of the same cable, a different cable or some other external source resulting in an undesired impressed voltage on a specific conductor. The potential effect of the undesired impressed voltage would be to cause equipment to operate or fail to operate in an undesired manner. Consider the following specific circuit failures related to hot shorts as part of the post-fire safe shutdown analysis: • A hot short between an energized conductor and a de-energized conductor within the same cable may cause a spurious actuation of equipment. The spuriously actuated device (e.g., relay) may be interlocked with another circuit that causes the spurious actuation of other equipment. This type of hot short is called a conductor-to-conductor hot short or an internal hot short. • A hot short between any external energized source such as an energized conductor from another cable (thermoplastic cables only) and a de-energized conductor may also cause a spurious actuation of equipment. This is called a cable-to-cable hot short or an external hot short. Cable-to-cable hot shorts between thermoset cables are not postulated to occur pending additional research.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

Attachment B
NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.5.2.3 Circuit Failures Due to a Hot Short [A, Grounded Circuits]

NEI 00-01 Guidance
A Hot Short on Grounded Circuits

A short-to-ground is another failure mode for a grounded control circuit. A short-to-ground as described above would result in de-energizing the circuit. This would further reduce the likelihood for the circuit to change the state of the equipment either from a control switch or due to a hot short. Nevertheless, a hot short still needs to be considered. Figure 3.5.2-4 shows a typical grounded control circuit that might be used for a motor-operated valve. However, the protective devices and position indication lights that would normally be included in the control circuit for a motor-operated valve have been omitted, since these devices are not required to understand the concepts being explained in this section. In the discussion provided below, it is assumed that a single fire in a given fire area could cause any one of the hot shorts depicted. The following discussion describes how to address the impact of these individual cable faults on the operation of the equipment controlled by this circuit.

[Refer to hard copy of NEI 00-01 Rev. 1 for Figure 3.5.2-4]

Hot short No. 1:
A hot short at this location would energize the close relay and result in the undesired closure of a motor-operated valve.

Hot short No. 2:
A hot short at this location would energize the open relay and result in the undesired opening of a motor-operated valve.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Intra-cable conductor to conductor hot shorts are analyzed, but external hot shorts are not considered credible at McGuire due to the armored cable configuration. The methodology assumes multiple fire induced failures including hot-shorts if energized conductors are present in the cable. Postulated cable and component failures were identified utilizing the techniques of the referenced NEI 00-01 figures for grounded circuits. Hot shorts need not be postulated if energized conductors are not present in the cable and cable-to-cable hot shorts are not postulated between armored cables. This approach meets the intent of the guidance.

Gap Analysis: NEI 00-01 Revision 2 added additional guidance on the treatment of MOVs per the IN 92-18 failure mode. This included consideration of location of operation of the affected valve, such as remote shutdown panel or local manual operation using the handwheel. The guidance discusses the need to perform additional analysis to ensure the valve can be operated using the handwheel and does not damage the MOV pressure boundary.
The McGuire Manual Action Feasibility analysis would have considered this guidance in its analysis but there were no MOV recovery actions in the affected fire area which required such analysis.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.2 Nuclear Safety Capability Circuit Analysis

NEI 00-01 Ref.
3.5.2.3 Circuit Failures Due to a Hot Short [B, Ungrounded Circuits]

NEI 00-01 Guidance
A Hot Short on Ungrounded Circuits

In the case of an ungrounded circuit, a single hot short may be sufficient to cause a spurious operation. A single hot short can cause a spurious operation if the hot short comes from a circuit from the positive leg of the same ungrounded source as the affected circuit.

In reviewing each of these cases, the common denominator is that in every case, the conductor in the circuit between the control switch and the start/stop coil must be involved.

Figure 3.5.2-5 depicted below shows a typical ungrounded control circuit that might be used for a motor-operated valve. However, the protective devices and position indication lights that would normally be included in the control circuit for a motor-operated valve have been omitted, since these devices are not required to understand the concepts being explained in this section.

In the discussion provided below, it is assumed that a single fire in a given fire area could cause any one of the hot shorts depicted. The discussion provided below describes how to address the impact of these cable faults on the operation of the equipment controlled by this circuit.

[Refer to hard copy of NEI 00-01 Rev. 1 for Figure 3.5.2-5]

Hot short No. 1:
A hot short at this location from the same control power source would energize the close relay and result in the undesired closure of a motor operated valve.

Hot short No. 2:
A hot short at this location from the same control power source would energize the open relay and result in the undesired opening of a motor operated valve.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Intra-cable conductor to conductor hot shorts are analyzed, but external hot shorts are not considered credible at McGuire due to the armored cable configuration. The methodology assumes multiple fire induced failures including hot-shorts if energized conductors are present in the cable. Postulated cable and component failures were identified utilizing the techniques of the referenced NEI 00-01 figures for ungrounded circuits. Hot shorts need not be postulated if energized conductors are not present in the cable; cable-to-cable hot shorts are not postulated between armored cables. This approach meets the intent of the guidance.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.3 Nuclear Safety Equipment and Cable Location.

Nuclear Safety Equipment and Cable Location. Physical location of equipment and cables shall be identified.

NEI 00-01 Ref.	NEI 00-01 Guidance
3.3.3.4 Identify Routing of Cables	Identify the routing for each cable including all raceway and cable endpoints. Typically, this information is obtained from joining the list of safe shutdown cables with an existing cable and raceway database

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns	The SSD database is a relational database that contains the data from the existing McGuire Cable and Raceway Tracking Databases. Cable identification Numbers, Endpoints, Drawing references and cable routing data are contained in the SSD database and tied to safe shutdown components and fire area location data.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.3 Nuclear Safety Equipment and Cable Location.

NEI 00-01 Ref.
3.3.3.5 Identify Location of Raceway and Cables by Fire Area

NEI 00-01 Guidance
Identify the fire area location of each raceway and cable endpoint identified in the previous step and join this information with the cable routing data. In addition, identify the location of field-routed cable by fire area. This produces a database containing all of the cables requiring fire area analysis, their locations by fire area, and their raceway.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
A listing of all required cables along with associated endpoints and raceway/junction points was obtained from the SSD database. A copy of the applicable McGuire layout drawings which depict fire areas was transposed/overlaid onto the electrical equipment layout drawings. A Cable Routing Worksheet for each cable was completed using the SSD database and the route verified to assure it was contiguous and that all necessary fire areas were assigned to the route.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.3 Nuclear Safety Equipment and Cable Location.

NEI 00-01 Ref.
3.5.2.4 Circuit Failures Due to Inadequate Circuit Coordination

NEI 00-01 Guidance
The evaluation of associated circuits of a common power source consists of verifying proper coordination between the supply breaker/fuse and the load breakers/fuses for power sources that are required for safe shutdown. The concern is that, for fire damage to a single power cable, lack of coordination between the supply breaker/fuse and the load breakers/fuses can result in the loss of power to a safe shutdown power source that is required to provide power to safe shutdown equipment.

For the example shown in Figure 3.5.2-6, the circuit powered from load breaker 4 supplies power to a non-safe shutdown pump. This circuit is damaged by fire in the same fire area as the circuit providing power from the Train B bus to the Train B pump, which is redundant to the Train A pump.

To assure safe shutdown for a fire in this fire area, the damage to the non-safe shutdown pump powered from load breaker 4 of the Train A bus cannot impact the availability of the Train A pump, which is redundant to the Train B pump. To assure that there is no impact to this Train A pump due to the associated circuits' common power source breaker coordination issue, load breaker 4 must be fully coordinated with the feeder breaker to the Train A bus.

[Refer to hard copy of NEI 00-01 Rev. 1 for Figure 3.5.2-6] A coordination study should demonstrate the coordination status for each required common power source. For coordination to exist, the time-current curves for the breakers, fuses and/or protective relaying must demonstrate that a fault on the load circuits is isolated before tripping the upstream breaker that supplies the bus. Furthermore, the available short circuit current on the load circuit must be considered to ensure that coordination is demonstrated at the maximum fault level.

The methodology for identifying potential associated circuits of a common power source and evaluating circuit coordination cases of associated circuits on a single circuit fault basis is as follows:

- Identify the power sources required to supply power to safe shutdown equipment.
- For each power source, identify the breaker/fuse ratings, types, trip settings and coordination characteristics for the incoming source breaker supplying the bus and the breakers/fuses feeding the loads supplied by the bus.
- For each power source, demonstrate proper circuit coordination using acceptable industry methods.
- For power sources not properly coordinated, tabulate by fire area the routing of cables whose breaker/fuse is not properly coordinated with the supply breaker/fuse. Evaluate the potential for disabling power to the bus in each of the fire areas in which the associated circuit cables of concern are routed and the power source is required for safe shutdown. Prepare a list of the following information for each fire area:

- Cables of concern.
- Affected common power source and its path.
- Raceway in which the cable is enclosed.
- Sequence of the raceway in the cable route.
- Fire zone/area in which the raceway is located.

For fire zones/areas in which the power source is disabled, the effects are mitigated by appropriate methods. Develop analyzed safe shutdown circuit dispositions for the associated circuit of concern cables routed in an area of the same path as required by the power source. Evaluate adequate separation based upon the criteria in Appendix R, NRC staff guidance, and plant licensing bases.

Applicability
Applicable

2.4.2.3 Nuclear Safety Equipment and Cable Location.

Alignment Statement	Alignment Basis	Reference
Aligns	A fault coordination analysis was performed. Where outright fault coordination did not exist, the related cabling was identified, routed and assigned a pseudo component number against the SSEL bus. During each specific Fire Area analysis, if these pseudo components surfaced against the SSEL bus as being required, subsequent analysis was performed utilizing source fault capabilities and cable impedance to Fire Area being analyzed. The results were shown to be acceptable or captured as a conflict with subsequent resolutions. Gap Analysis: NEI 00-01 Revision 2 added additional guidance to ensure breaker coordination. This guidance included examples for breakers that have internal breaker tripping devices that do not require control power and breakers that require control power for tripping. The latter requires an evaluation to ensure the availability of control power. McGuire performed circuit analysis that evaluated for this condition.	MCC-1381.05-00-0335 / AREVA calc. 32-9043224-001 Rev. 1 - McGuire Nuclear Station Appendix R NFPA 805 Coordination Study

2.4.2.3 Nuclear Safety Equipment and Cable Location.

NEI 00-01 Ref.
3.5.2.5 Circuit Failures Due to Common Enclosure Concerns

NEI 00-01 Guidance
The common enclosure associated circuit concern deals with the possibility of causing secondary failures due to fire damage to a circuit either whose isolation device fails to isolate the cable fault or protect the faulted cable from reaching its ignition temperature, or the fire somehow propagates along the cable into adjoining fire areas.

The electrical circuit design for most plants provides proper circuit protection in the form of circuit breakers, fuses and other devices that are designed to isolate cable faults before ignition temperature is reached. Adequate electrical circuit protection and cable sizing are included as part of the original plant electrical design maintained as part of the design change process. Proper protection can be verified by review of as-built drawings and change documentation. Review the fire rated barrier and penetration designs that preclude the propagation of fire from one fire area to the next to demonstrate that adequate measures are in place to alleviate fire propagation concerns.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
For Cable Protection: The cable used at McGuire is of the armored type. Tests performed have demonstrated that a fault within a cable will not propagate into an adjacent cable, even if the breaker feeding the faulted cable fails to trip. Interruption of the fault current is accomplished by the breaker feeding the associated circuit. The breaker is adequately sized to protect the cable per the standard Duke Energy design practice.

For Fault Coordination: McGuire has performed fault coordination study that includes all SSEL components and power supplies. The results were shown to be acceptable or captured as a conflict with subsequent resolutions.

McGuire's fire barriers and barrier penetrations are provided in accordance with NRC's guidelines (SER Supp. 5).

Reference
1982-10-12 Duke Letter to NRC - Response to Appendix R McGuire Nuclear Station Unit 2
1982-10-21 Duke letter to NRC - Duke's evaluation of App. R requirements for Unit 1 - notably SSF associated circuits
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)
NRC SER No. 6 dated February 1983 - Safety Evaluation Report Related to Operations of McGuire Nuclear Station, Units 1 and 2

2.4.2.4 Fire Area Assessment.

Fire Area Assessment. An engineering analysis shall be performed in accordance with the requirements of Section 2.3 for each fire area to determine the effects of fire or fire suppression activities on the ability to achieve the nuclear safety performance criteria of Section 1.5. [See Chapter 4 for methods of achieving these performance criteria (performance-based or deterministic).

NEI 00-01 Ref.	NEI 00-01 Guidance
3.4 Fire Area Assessment and Compliance Assessment	By determining the location of each component and cable by fire area and using the cable to equipment relationships described above, the affected safe shutdown equipment in each fire area can be determined. Using the list of affected equipment in each fire area, the impacts to safe shutdown systems, paths and functions can be determined. Based on an assessment of the number and types of these impacts, the required safe shutdown path for each fire area can be determined. The specific impacts to the selected safe shutdown path can be evaluated using the circuit analysis and evaluation criteria contained in Section 3.5 of this document. Having identified all impacts to the required safe shutdown path in a particular fire area, this section provides guidance on the techniques available for individually mitigating the effects of each of the potential impacts.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.	NEI 00-01 Guidance
3.4.1 Criteria / Assumptions	The following criteria and assumptions apply when performing fire area compliance assessment to mitigate the consequences of the circuit failures identified in the previous sections for the required safe shutdown path in each fire area.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.4.1.1 [Number of Postulated Fires]

NEI 00-01 Guidance
Assume only one fire in any single fire area at a time.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Only one fire in a single fire area is assumed to occur.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.	NEI 00-01 Guidance	
3.4.1.2 [Damage to Unprotected Equipment and Cables]	Assume that the fire may affect all unprotected cables and equipment within the fire area. This assumes that neither the fire size nor the fire intensity is known. This is conservative and bounds the exposure fire that is required by the regulation.	
Applicability		
Applicable		
Alignment Statement	**Alignment Basis**	**Reference**
Aligns	All equipment and cabling within a given fire area are assumed damaged by the fire.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.4.1.3 [Assess Impacts to Required Components]

NEI 00-01 Guidance
Address all cable and equipment impacts affecting the required safe shutdown path in the fire area. All potential impacts within the fire area must be addressed. The focus of this section is to determine and assess the potential impacts to the required safe shutdown path selected for achieving post-fire safe shutdown and to assure that the required safe shutdown path for a given fire area is properly protected.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
The fire area analysis methodology assumes multiple fire induced failures and multiple spurious actuations based on the cables and components present in the Fire Area of concern. All postulated cable and component failures were identified and only those cables causing non-compliance(s) were analyzed for circuit failure results. The relied on success path was analyzed so that mitigating strategies could be developed and documented in the fire area compliance assessment. These analyses are tracked in the SSD database.

Reference
DATATRAK Rev. 0.0 - NFPA 805 Database Management System, Version 0.0
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.4.1.4 [Manual Actions]

NEI 00-01 Guidance
Use manual actions where appropriate to achieve and maintain post-fire safe shutdown conditions in accordance with NRC requirements.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
The least impacted success path was analyzed and VFDRs were identified. Mitigating strategies to address the VFDRs in a performance based Fire Risk Evaluation were developed and documented. One of the potential mitigating strategies is procedural action (recovery action) to mitigate the operational effects from fire damage.

Reference
MCC-1435.00-00-0045 Rev. 0 - NFPA 805 Transition Recovery Action Feasibility Review
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Comments
Manual actions may be justified under the performance-based requirements of NFPA 805 Section 4.2.4.

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.4.1.5 [Repairs]

NEI 00-01 Guidance
Where appropriate to achieve and maintain cold shutdown within 72 hours, use repairs to equipment required in support of post fire shutdown.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
NFPA 805 does not have explicit requirements to achieve cold shutdown within 72 hours. McGuire maintains the fuel in a safe and stable condition for all modes of operation. The 'At Power' safe shutdown analysis postulates a single fire occurring at 100% power and provides the listing of conflicts that may impact the assured success path to meet a particular nuclear safety performance goal. The 'At Power' safe and stable strategy includes entry into hot standby (Mode 3) and stops prior to the point of manually initiating a cooldown. Safe and stable conditions at HSB may continue long term with several activities in place. The least impacted safe shutdown success path was analyzed for 'At Power' conditions and variances from the deterministic requirements of NFPA 805, Section 4.2.3 (VFDRs) were identified. Mitigating strategies to address VFDRs were developed and documented in Fire Risk Evaluations (FREs). Recovery actions may be prescribed by a FRE to restore a nuclear performance goal given they are feasible and reliable.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.4.1.6 [Assess Compliance with Deterministic Criteria]

NEI 00-01 Guidance
Appendix R compliance requires that one train of systems necessary to achieve and maintain hot shutdown conditions from either the control room or emergency control station(s) is free of fire damage (III.G.1.a). When cables or equipment, including associated circuits, are within the same fire area outside primary containment and separation does not already exist, provide one of the following means of separation for the required safe shutdown path(s):

- Separation of cables and equipment and associated nonsafety circuits of redundant trains within the same fire area by a fire barrier having a 3-hour rating (III.G.2.a)
- Separation of cables and equipment and associated nonsafety circuits of redundant trains within the same fire area by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area (III.G.2.b).
- Enclosure of cable and equipment and associated non-safety circuits of one redundant train within a fire area in a fire barrier having a one-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area (III.G.2.c).

For fire areas inside noninerted containments, the following additional options are also available:

- Separation of cables and equipment and associated nonsafety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards (III.G.2.d);
- Installation of fire detectors and an automatic fire suppression system in the fire area (III.G.2.e); or
- Separation of cables and equipment and associated non-safety circuits of redundant trains by a noncombustible radiant energy shield (III.G.2.f).

Use exemptions, deviations and licensing change processes to satisfy the requirements mentioned above and to demonstrate equivalency depending upon the plant's license requirements.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
The least impacted success path was analyzed and VFDRs were identified. Mitigating strategies to address the VFDRs in a performance based Fire Risk Evaluation were developed and documented. The methods described above are options to satisfy the deterministic criteria to preclude identification of VFDRs.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.	NEI 00-01 Guidance
3.4.1.7 [Consider Additional Equipment]	Consider selecting other equipment that can perform the same safe shutdown function as the impacted equipment. In addressing this situation, each equipment impact, including spurious operations, is to be addressed in accordance with regulatory requirements and the NPP's current licensing basis.

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Aligns with intent	The least impacted success path was analyzed and VFDRs were identified. Mitigating strategies to address the VFDRs in a performance based Fire Risk Evaluation were developed and documented. Selection of the least impacted safe shutdown path incorporates the philosophy of additional equipment that can be relied upon.	MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.4.1.8 [Consider Instrument Tubing Effects]

NEI 00-01 Guidance
Consider the effects of the fire on the density of the fluid in instrument tubing and any subsequent effects on instrument readings or signals associated with the protected safe shutdown path in evaluating post-fire safe shutdown capability. This can be done systematically or via procedures such as Emergency Operating Procedures.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
An evaluation of instrument tubing has been performed for McGuire. The evaluation treated the tubing like cabling and associated it with the instrument. The underlying assumption being that the fire impact to an instrument's reading would be adverse and an alternate instrument would be required to fulfill the nuclear safety performance function. However, for containment the physics of instrument tubing in the area of concern will yield acceptable results in that fire induced fluid density changes will cancel out (for PZR level) or will have no consequence (for PZR pressure).

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.	NEI 00-01 Guidance
3.4.2 Methodology for Fire Area Assessment	Refer to Figure 3-5 for a flowchart illustrating the various steps involved in performing a fire area assessment. Use the following methodology to assess the impact to safe shutdown and demonstrate Appendix R compliance: [Refer to hard copy of NEI 00-01 for Figure 3-5]

Applicability
Applicable

Alignment Statement	Alignment Basis	Reference
Not Applicable	Generic paragraph - alignment described in specific sections.	

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.	NEI 00-01 Guidance	
3.4.2.1 Identify the Affected Equipment by Fire Area	Identify the safe shutdown cables, equipment and systems located in each fire area that may be potentially damaged by the fire. Provide this information in a report format. The report may be sorted by fire area and by system in order to understand the impact to each safe shutdown path within each fire area (see Attachment 5 for an example of an Affected Equipment Report).	
Applicability Applicable		
Alignment Statement	**Alignment Basis**	**Reference**
Aligns	The SSD database provides a listing of the safe shutdown equipment and cables by Fire Area.	DATATRAK Rev. 0.0 - NFPA 805 Database Management System, Version 0.0 MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.4.2.2 Determine the Shutdown Paths Least Impacted By a Fire in Each Fire Area

NEI 00-01 Guidance
Based on a review of the systems, equipment and cables within each fire area, determine which shutdown paths are either unaffected or least impacted by a postulated fire within the fire area. Typically, the safe shutdown path with the least number of cables and equipment in the fire area would be selected as the required safe shutdown path. Consider the circuit failure criteria and the possible mitigating strategies, however, in selecting the required safe shutdown path in a particular fire area. Review support systems as a part of this assessment since their availability will be important to the ability to achieve and maintain safe shutdown. For example, impacts to the electric power distribution system for a particular safe shutdown path could present a major impediment to using a particular path for safe shutdown. By identifying this early in the assessment process, an unnecessary amount of time is not spent assessing impacts to the frontline systems that will require this power to support their operation.

Based on an assessment as described above, designate the required safe shutdown path(s) for the fire area. Identify all equipment not in the safe shutdown path whose spurious operation or maloperation could affect the shutdown function. Include these cables in the shutdown function list. For each of the safe shutdown cables (located in the fire area) that are part of the required safe shutdown path in the fire area, perform an evaluation to determine the impact of a fire-induced cable failure on the corresponding safe shutdown equipment and, ultimately, on the required safe shutdown path.

When evaluating the safe shutdown mode for a particular piece of equipment, it is important to consider the equipment's position for the specific safe shutdown scenario for the full duration of the shutdown scenario. It is possible for a piece of equipment to be in two different states depending on the shutdown scenario or the stage of shutdown within a particular shutdown scenario. Document information related to the normal and shutdown positions of equipment on the safe shutdown equipment list.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
The least impacted success path was analyzed and logic diagrams were then highlighted to show the relied on success paths for a given fire area. The Safe Shutdown Equipment List documents required positions for each mode, as needed. Potential spurious impact of non-credited equipment is evaluated by their inclusion in the fire area compliance analysis. VFDRs were identified and mitigating strategies to address the VFDRs in a performance based Fire Risk Evaluation were developed and documented.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.4.2.3 Determine Safe Shutdown Equipment Impacts

NEI 00-01 Guidance
Using the circuit analysis and evaluation criteria contained in Section 3.5 of this document, determine the equipment that can impact safe shutdown and that can potentially be impacted by a fire in the fire area, and what those possible impacts are.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
The fire area analysis methodology selected a success path based on cables/components in a Fire Area being analyzed. For this path, multiple fire induced failures and multiple spurious actuations were analyzed. All postulated safe shutdown cable and component failures for the assured path were identified and a resolution provided at the cable or component level (i.e. recovery action, modification, etc.). Although analysis reveals all SSEL component conflicts in a given fire area, the least impacted train is selected as a credited train and only its assurance is analyzed. Thus, McGuire aligns with intent.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

Attachment B

NEI 04-02 Table B-2 – Nuclear Safety Capability Assessment - Methodology Review

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.4.2.4 Develop a Compliance Strategy or Disposition to Mitigate the Effects Due to Fire Damage to Each Required Component or Cable

NEI 00-01 Guidance
The available deterministic methods for mitigating the effects of circuit failures are summarized as follows (see Figure 1-2):

- Provide a qualified 3-fire rated barrier.
- Provide a 1-hour fire rated barrier with automatic suppression and detection.
- Provide separation of 20 feet or greater with automatic suppression and detection and demonstrate that there are no intervening combustibles within the 20 foot separation distance.
- Reroute or relocate the circuit/equipment, or perform other modifications to resolve vulnerability.
- Provide a procedural action in accordance with regulatory requirements.
- Perform a cold shutdown repair in accordance with regulatory requirements.
- Identify other equipment not affected by the fire capable of performing the same safe shutdown function.
- Develop exemptions, deviations, Generic Letter 86-10 evaluation or fire protection design change evaluations with a licensing change process.

Additional options are available for non-inerted containments as described in 10 CFR 50 Appendix R section III.G.2.d, e and f.

Applicability
Applicable

Alignment Statement
Aligns with intent

Alignment Basis
Success paths were analyzed and potential impacts identified . These potential impacts were resolved by specifying one or more of the options listed above such that the least impacted success path could be identified. VFDRs were identified and mitigating strategies to address the VFDRs in a performance based Fire Risk Evaluation were developed and documented. Credit for transitioning EEEEs and licensing actions was taken wherever possible and procedural (recovery) action specified as a last resort.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.4.2.5 Document the Compliance Strategy or Disposition Determined to Mitigate the Effects Due to Fire Damage to Each Required Component or Cable

NEI 00-01 Guidance
Assign compliance strategy statements or codes to components or cables to identify the justification or mitigating actions proposed for achieving safe shutdown. The justification should address the cumulative effect of the actions relied upon by the licensee to mitigate a fire in the area. Provide each piece of safe shutdown equipment, equipment not in the path whose spurious operation or mal-operation could affect safe shutdown, and/or cable for the required safe shutdown path with a specific compliance strategy or disposition. Refer to Attachment 6 for an example of a Fire Area Assessment Report documenting each cable disposition.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Compliance assessment disposition codes and their descriptions (i.e., resolution of component made inoperable by the fire) are a part of the SSD database. Components which were only affected by a power supply loss were dispositioned only if the component was relied upon to meet nuclear safety performance criteria and the failure resulted in an undesired position. Similarly, affected components that were not in the assured success path or affected the success path were not dispositioned. The cumulative effect of the actions relied upon to mitigate the effects of a fire in the area have been evaluated.

Reference
MCC-1435.00-00-0059 Rev. 2 - NFPA 805 - App. R Safe Shutdown Deterministic Analysis (AREVA EIR 51-9156402-002)

2.4.2.4 Fire Area Assessment.

NEI 00-01 Ref.
3.5.1.5 [C, Likelihood of Undesired Consequences]

NEI 00-01 Guidance
Determination of the potential consequence of the damaged associated circuits is based on the examination of specific NPP piping and instrumentation diagrams (P&IDs) and review of components that could prevent operation or cause maloperation such as flow diversions, loss of coolant, or other scenarios that could significantly impair the NPP's ability to achieve and maintain hot shutdown. When considering the potential consequence of such failures, the [analyst] should also consider the time at which the prevented operation or maloperation occurs. Failures that impede hot shutdown within the first hour of the fire tend to be most risk significant in a first-order evaluation. Consideration of cold-shutdown circuits is deferred pending additional research.

Applicability
Applicable

Alignment Statement
Aligns

Alignment Basis
Treatment of multiple spurious actuations has been performed in accordance with FAQ 07-0038, consistent with RG 1.205. Multiple fire induced failures and multiple spurious actuations were identified via safe shutdown analysis, generic list of MSOs, self assessments, PRA insights, and operating experience. An expert panel evaluated consequences of the damaged associated circuits with respect to maintaining the nuclear safety performance criteria. Any impacts determined to adversely affect nuclear safety performance criteria for the 'At Power' analysis were reconciled by the RI-PB process.

Reference
MCC-1435.00-00-0023 Rev. 1 - NFPA Transition Expert Panel Report for Addressing Potential McGuire Multiple Spurious Operations

C. NEI 04-02 Table B-3 – Fire Area Transition

Table C-1 – NFPA 805 Ch 4 Compliance (NEI 04-02 Table B-3) 850 Pages

Table C-2 – NFPA 805 Required Fire Protection Systems and Features 29 Pages

879 Pages Attached

Attachment C

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
500	RHR Pump 1B
501	RHR Pump 1A
502	Containment Spray Pump 1A
503	Containment Spray Pump 1B
504	Containment Spray Pump 2B
505	Containment Spray Pump 2A
506	RHR Pump 2A
507	RHR Pump 2B
508	Corridor

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

Fire Area ID: 01 (Unit 1) - Aux Building Common El 695 — **Performance Goals**
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST (Auxiliary Feedwater Storage Tank) or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring available in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.4 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the redundant KC, NV, RN, and ND pumps. The calculation determined the fire barriers are considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Limited in-situ and transient combustibles • Area fixed automatic sprinkler systems • Administrative controls for hot work and combustible loading • Area fire detection • Fire brigade response • Penetration seal construction. Due to the conditions identified above and the presence of the SSF, a fire in these areas is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID Revision	MCC-1435.03-00-0014, Att. 09 GL 86-10 Evaluation of Unrated fire barrier stairway openings at Auxiliary Building elevation 716' (FA 1 to FA 4)
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two circular stairway floor openings in the Auxiliary Building (AB) barrier at elevation 716' separating Fire Areas (FAs) 1 and 4. The calculation determined the barrier to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • limited in situ combustibles (IEEE 383 cable), • the combustible controls, • automatic detection, • suppression on elevations 695' and 716' in areas of stairs, • local manual suppression equipment, • use of SSS for safe shutdown on both elevations, • the fire brigade response.

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

The following open items were identified during this evaluation to support assumptions used for this evaluation:

1. NSD-313 needs to be revised to identify the 5 ft space around each open circular stairwell on elevations 695' and 716' as an Exclusion Area for transient combustibles during all modes.

Attachment C

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

Fire Area ID: 01 (Unit 1) - Aux Building Common El 695
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
500	RHR Pump 1B	E	E	E	Combustible Control: E Detection System, FA 01 Detection: E Water Suppression, FA 01 Suppression: E
501	RHR Pump 1A	E	E	E	Combustible Control: E Detection System, FA 01 Detection: E Water Suppression, FA 01 Suppression: E
502	Containment Spray Pump 1A	None	None	None	None
503	Containment Spray Pump 1B	None	None	None	None
504	Containment Spray Pump 2B	None	None	None	None
505	Containment Spray Pump 2A	None	None	None	None
506	RHR Pump 2A	E	E	E	Combustible Control: E Detection System, FA 01 Detection: E Water Suppression, FA 01 Suppression: E
507	RHR Pump 2B	E	E	E	Combustible Control: E Detection System, FA 01 Detection: E Water Suppression, FA 01 Suppression: E
508	Corridor	E	E	E, R	Combustible Control: E R Detection System, FA 01 Detection: E Water Suppression, FA 01 Suppression: E

Title Fire Risk Evaluation for Fire Area 01 (Unit 1)

Risk Summary Assuming a compliant risk of 0.00, the delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [Common] 2.17E-09

Δ LERF Units: [Common] 2.01E-09

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The risk acceptance criteria are met with substantial margin to account for analytical methods associated with fire scenarios since there are no offending cables to remove in order to create the compliant condition. The analyzed scenarios bound potential fuel packages which can reasonably be expected to occur in this area. The transient scenario is not a major contributor to the risk of the area, therefore, additional administrative controls would not provide appreciable benefit. However, to ensure the MCA evaluation remains bounding, additional administrative controls in the form of a combustible exclusion area is being designated in the area of the spiral staircase. In the event of no intervention by the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the analyzed scenario. The ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-07 (OE-1-001)
VFDR	This component, which is normally open, required closed for HSB, is affected by being located in the fire area. Valve 1NS VA0020A is required closed to mitigate FWST drain down to the containment sump (MSO #14). A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 512. Valve can fail as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may challenge the 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.
Component(s)	1NS VA0020A - 1A Containment Spray Pump Suction from FWST Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-08 (OE-1-002)
VFDR	This component, which is normally open, required closed for HSB, is affected by being located in the fire area. Valve 1NS VA0003B is required closed to mitigate FWST drain down to the containment sump (MSO #14). A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 503. Valve can fail as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may challenge the 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.
Component(s)	1NS VA0003B - 1B Containment Spray Pump Suction from FWST Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-13 (OP-1-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1ND-19A, 1ND-4B, and 1FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. The valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - FWST to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-14 (OP-1-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1ND-19A, 1ND-4B, and 1FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. The valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0004B - 1B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-15 (OP-1-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1ND-19A, 1ND-4B, and 1FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0019A - A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-16 (OP-1-024)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1ND-19A, 1ND-4B, and 1FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action	
VFDR ID	VFDR-01-17 (OP-1-024)	
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1ND-19A, 1ND-4B, and 1FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.	
Component(s)	1NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action	
VFDR ID	VFDR-01-18 (OP-1-021)	
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.	
Component(s)	1NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)	

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-19 (OP-1-024)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1ND-19A, 1ND-4B, and 1FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-28 (OE-1-008)
VFDR	This component, which is normally open, required closed for HSB, is affected by being located in the fire area. Valve 1FW VA0027A is required closed to mitigate FWST drain down to the containment sump (MSO #14). The valve is required closed for CSD to allow alignment of the ND system to NC loop 3. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*FW 502. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - FWST to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-29 (OE-1-009)
VFDR	This component, which is normally open, required closed for HSB, is affected by being located in the fire area. Valve 1ND VA0004B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1ND VA0019A or 1ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves are located in the affected fire area (FA 1) and have IN 92-18 concerns in both directions. A Potential IN 92-18 concern exists for 1ND VA0004B due to spurious operation from failure of cable 1*ND 504. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1ND VA0004B - 1B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-30 (OE-1-010)
VFDR	This component, which is normally open, required closed for HSB, is affected by being located in the fire area. Valve 1ND VA0019A is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1ND VA0019A or 1ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves are located in the affected Fire Area (FA 1) and have IN 92-18 concerns in both directions. A potential IN 92-18 concern exists for 1ND VA0019A due to spurious operation from failure of cable 1*ND 501. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1ND VA0019A - 1A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-31 (OE-1-011)
VFDR	This component, which is normally closed, required closed for HSB, is affected by being located in the fire area. Valve 1NS VA0018A is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1NS VA0018A or 1NS VA0001B) is required closed depending on which train is used for Reactor Heat Removal. Both valves are located in the affected Fire Area (FA 1) and have IN 92-18 concerns in both directions. A potential IN 92-18 concern exists for 1NS VA0018A due to spurious operation from failure of cable 1*NS 511. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat. (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1NS VA0018A - 1A Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-32 (OE-1-012)
VFDR	This component, which is normally closed, required closed for HSB, is affected by being located in the fire area.C33 Valve 1NS VA0001B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1NS VA0018A or 1NS VA0001B) is required closed depending on which train is used for Reactor Heat Removal. Both valves are located in the affected Fire Area (FA 1) and have IN 92-18 concerns in both directions. A potential IN 92-18 concern exists for 1NS VA0001B due to spurious operation from failure of cable 1*NS 502. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1NS VA0001B - 1B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-38 (OP-1-021)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-39 (OP-1-021)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-40 (OP-1-021)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0001B - 1B Containment Spray Pump Suction from Containment Sump Isolation Valve

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-41 (OP-1-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0003B - 1B Containment Spray Pump Suction from FWST Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-42 (OP-1-021)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0018A - 1A Containment Spray Pump Suction from Containment Sump Isolation Valve, which is normally closed
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-43 (OP-1-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0020A - 1A Containment Spray Pump Suction from FWST Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-50 (PH-1-001)
VFDR	This component, which is normally open, required to be cycled for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA (Auxiliary Feedwater) suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-53 (PH-1-010)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRA can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Safety/Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRA - Backup Pressurizer Heater Group 1A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-54 (PH-1-010)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRB can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Safety/Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-55 (PH-1-010)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRC can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRC - Pressurizer Heater Group 1C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-56 (PH-1-010)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRD can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRD - Pressurizer Heater Group 1D
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-57 (PH-1-013)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-58 (PH-1-013)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-59 (PH-1-015)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0083 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0083 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0078 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0078 or 1SM VA0083 is required closed. Valve 1SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0083 - A Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-60 (PH-1-016)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0089 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0089 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0084 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0084 or 1SM VA0089 is required closed. Valve 1SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0089 - B Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-61 (PH-1-017)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0095 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0095 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0090 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0090 or 1SM VA0095 is required closed. Valve 1SM VA0095 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0095 - C Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-62 (PH-1-018)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0101 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0101 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0096 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0096 or 1SM VA0101 is required closed. Valve 1SM VA0101 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0101 - D Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-70 (PH-1-030)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (1NV PU0015 and 1NV PU0016) are subject to spurious operation (start or stop) due to interlock failure. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. valuate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0001 - 1A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-71 (PH-1-030)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (1NV PU0015 and 1NV PU0016) are subject to spurious operation (start or stop) due to interlock failure. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0002 - 1B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-72 (PH-1-030)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (1NV PU0015 and 1NV PU0016) are subject to spurious operation (start or stop) due to interlock failure. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0003 - 1C Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	01 (Unit 1) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-73 (PH-1-030)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (1NV PU0015 and 1NV PU0016) are subject to spurious operation (start or stop) due to interlock failure. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0004 - 1D Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID: 01 (Unit 2) - Aux Building Common El 695 — **Fire Area Definition**
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description
500	RHR Pump 1B
501	RHR Pump 1A
502	Containment Spray Pump 1A
503	Containment Spray Pump 1B
504	Containment Spray Pump 2B
505	Containment Spray Pump 2A
506	RHR Pump 2A
507	RHR Pump 2B
508	Corridor

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

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring	Process monitoring available in the SSF.	
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.4 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the redundant KC, NV, RN, and ND pumps. The calculation determined the fire barriers are considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Limited in-situ and transient combustibles • Area fixed automatic sprinkler systems • Administrative controls for hot work and combustible loading • Area fire detection • Fire brigade response • Penetration seal construction. Due to the conditions identified above and the presence of the SSF, a fire in these areas is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID Revision	MCC-1435.03-00-0014, Att. 09 GL 86-10 Evaluation of Unrated fire barrier stairway openings at Auxiliary Building elevation 716' (FA 1 to FA 4)
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two circular stairway floor openings in the Auxiliary Building (AB) barrier at elevation 716' separating Fire Areas (FAs) 1 and 4. The calculation determined the barrier to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • limited in situ combustibles (IEEE 383 cable), • the combustible controls, • automatic detection, • suppression on elevations 695' and 716' in areas of stairs, • local manual suppression equipment, • use of SSS for safe shutdown on both elevations, • the fire brigade response.

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

The following open items were identified during this evaluation to support assumptions used for this evaluation:

1. NSD-313 needs to be revised to identify the 5 ft space around each open circular stairwell on elevations 695' and 716' as an Exclusion Area for transient combustibles during all modes.

Attachment C

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

Fire Area ID: 01 (Unit 2) - Aux Building Common El 695
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
500	RHR Pump 1B	E	E	E	Combustible Control: E Detection System, FA 01 Detection: E Water Suppression, FA 01 Suppression: E
501	RHR Pump 1A	E	E	E	Combustible Control: E Detection System, FA 01 Detection: E Water Suppression, FA 01 Suppression: E
502	Containment Spray Pump 1A	None	None	None	None
503	Containment Spray Pump 1B	None	None	None	None
504	Containment Spray Pump 2B	None	None	None	None
505	Containment Spray Pump 2A	None	None	None	None
506	RHR Pump 2A	E	E	E	Combustible Control: E Detection System, FA 01 Detection: E Water Suppression, FA 01 Suppression: E
507	RHR Pump 2B	E	E	E	Combustible Control: E Detection System, FA 01 Detection: E Water Suppression, FA 01 Suppression: E
508	Corridor	E	E	E, R	Combustible Control: E R Detection System, FA 01 Detection: E Water Suppression, FA 01 Suppression: E

Title Fire Risk Evaluation for Fire Area 01 (Unit 2)

Risk Summary Assuming a compliant risk of 0.00, the delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [Common] 2.16E-09

Δ LERF Units: [Common] 2.01E-09

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The risk acceptance criteria are met with substantial margin to account for analytical methods associated with fire scenarios since there are no offending cables to remove in order to create the compliant condition. The analyzed scenarios bound potential fuel packages which can reasonably be expected to occur in this area. The transient scenario is not a major contributor to the risk of the area, therefore, additional administrative controls would not provide appreciable benefit. However, to ensure the MCA evaluation remains bounding, additional administrative controls in the form of a combustible exclusion area is being designated in the area of the spiral staircase. In the event of no intervention by the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the analyzed scenarios. The ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-01 (PH-1-034)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-02 (PH-1-034)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-03 (PH-1-035)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA 0083 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0083 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA 0078 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA 0078 or 2SM VA 0083 is required closed. Valve 2SM VA 0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0083 - A Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-04 (PH-1-041)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA 0089 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0089 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA 0084 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA 0084 or 2SM VA 0089 is required closed. Valve 2SM VA 0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0089 - B Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-05 (PH-1-042)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA 0095 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0095 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA 0090 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA 0090 or 2SM VA 0095 is required closed. Valve 2SM VA 0095 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0095 - C Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-06 (PH-1-043)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA 0101 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0101 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA 0096 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA 0096 or 2SM VA 0101 is required closed. Valve 2SM VA 0101 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0101 - D Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-09 (OE-1-003)
VFDR	This component, which is normally open, required closed for HSB, is affected by being located in the fire area. Valve 2FW VA0027A is required closed to mitigate FWST drain down to the containment sump (MSO #14). The valve is required closed for CSD to allow alignment of the ND system to NC loop 3. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*FW 508. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2FW VA0027A - FWST to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-10 (OE-1-004)
VFDR	This component, which is normally open, required closed for HSB, is affected by being located in the fire area. Valve 2ND VA0019A is required closed to mitigate FWST drain down to the containment sump. (MSO #14). One of the valves (2ND VA0019A or 2ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves are located in the affected Fire Area (FA 1) and have IN 92-18 concerns in both directions. A potential IN 92-18 concern exists for 2ND VA0019A due to spurious operation from failure of cable 2*ND 504. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2ND VA0019A - 2A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-11 (OE-1-005)
VFDR	This component, which is normally closed, required closed for HSB, is affected by being located in the fire area. Valve 2NS VA0018A is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (2NS VA0018A or 2NS VA0001B) is required closed depending on which train is used for Reactor Heat Removal. Both valves are located in the affected Fire Area (FA 1) and have IN 92-18 concerns in both directions. A potential IN 92-18 concern exists for 2NS VA0018A due to spurious operation from failure of cable 2*NS 511. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2NS VA0018A - 2A Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-12 (OE-1-006)
VFDR	This component, which is normally closed, required closed for HSB, is affected by being located in the fire area. Valve 2NS VA0001B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1NS VA0018A or 1NS VA0001B) is required closed depending on which train is used for Reactor Heat Removal. Both valves are located in the affected Fire Area (FA 1) and have IN 92-18 concerns in both directions. A potential IN 92-18 concern exists for 2NS VA0001B due to spurious operation from failure of cable 2*NS 567. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2NS VA0001B - 2B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-20 (OP-1-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2ND-19A, 2ND-4B, and 2FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2FW VA0027A - FWST to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-21 (OP-1-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2ND-19A, 2ND-4B, and 2FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0004B - 2B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-22 (OP-1-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2ND-19A, 2ND-4B, and 2FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0019A - 2A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-23 (OE-1-007)
VFDR	This component, which is normally open, required closed for HSB, is affected by being located in the fire area. Valve 2ND VA0004B is required closed to mitigate FWST drain down to the containment sump. (MSO #14). One of the valves (2ND VA0019A or 2ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves are located in the affected Fire Area (FA 1) and have IN 92-18 concerns in both directions. A potential IN 92-18 concern exists for 2ND VA0004B due to spurious operation from failure of cable 2*ND 514. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2ND VA0004B - 2B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-24 (OP-1-025)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2ND-19A, 2ND-4B, and 2FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-25 (OP-1-025)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2ND-19A, 2ND-4B, and 2FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-26 (OP-1-022)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-27 (OP-1-025)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2ND-19A, 2ND-4B, and 2FW-27A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)	
VFDR ID	VFDR-01-33 (OE-1-013)	
VFDR	This component, which is normally open, required closed for HSB, is affected by being located in the fire area. Valve 2NS VA0003B is required closed to mitigate FWST drain down to the containment sump (MSO #14). A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 568. Valve can fail as follows: If valve stalls in the OPEN direction, no damage should occur. Should be able to manually CLOSE valve. If valve stalls in the CLOSE direction, structural limit will be exceeded, probably will result in not being able to reopen (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may challenge the 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.	
Component(s)	2NS VA0003B - 2B Containment Spray Pump Suction from FWST Isolation Valve	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)	
VFDR ID	VFDR-01-34 (OE-1-014)	
VFDR	This component, which is normally open, required closed for HSB, is affected by being located in the fire area. Valve 2NS VA0020A is required closed to mitigate FWST drain down to the containment sump (MSO #14). A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 512. Valve can fail as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may challenge the 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.	
Component(s)	2NS VA0020A - 2A Containment Spray Pump Suction from FWST Isolation Valve	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)	
VFDR ID	VFDR-01-35 (OP-1-004)	
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.	
Component(s)	2RC VA0205 - 2C Main Condenser Supply Piping Vent Valve	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)	

Attachment C

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

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-36 (OP-1-004)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0206 - 2B Main Condenser Supply Piping Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-37 (OP-1-004)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0207 - 2A Main Condenser Supply Piping Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-44 (OP-1-022)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-45 (OP-1-022)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-46 (OP-1-022)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0001B - 2B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-01-47 (OP-1-022)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0003B - 2B Containment Spray Pump Suction from FWST Isolation Valve

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

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Disposition Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID VFDR-01-48 (OP-1-022)

VFDR This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.

Component(s) 2NS VA0018A - 2A Containment Spray Pump Suction from Containment Sump Isolation Valve

Disposition Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID VFDR-01-49 (OP-1-022)

VFDR This component, which is normally open, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A are located in Fire Area 1 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this area. Therefore, a spurious Safety Injection Signal could cause the valves to open. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.

Component(s) 2NS VA0020A - 2A Containment Spray Pump Suction from FWST Isolation Valve

Disposition Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-63 (PH-1-019)
VFDR	This component, which is normally open, required to be cycled for HSB, is affected by an assumed loss of offsite power. Power supply 2EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-66 (PH-1-027)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRA can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Safety/Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRA - Backup Pressurizer Heater Group 2A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-67 (PH-1-027)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRB can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Safety/Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-68 (PH-1-027)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRC can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRC - Pressurizer Heater Group 2C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-69 (PH-1-027)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRD can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRD - Pressurizer Heater Group 2D
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-74 (PH-1-031)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (2NV PU0015 and 2NV PU0016) are subject to spurious operation (start or stop) due to interlock failure. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0001 - 2A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	01 (Unit 2) - Aux Building Common El 695	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-01-75 (PH-1-031)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (2NV PU0015 and 2NV PU0016) are subject to spurious operation (start or stop) due to interlock failure. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0002 - 2B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-76 (PH-1-031)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (2NV PU0015 and 2NV PU0016) are subject to spurious operation (start or stop) due to interlock failure. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0003 - 2C Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-01-77 (PH-1-031)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (2NV PU0015 and 2NV PU0016) are subject to spurious operation (start or stop) due to interlock failure. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0004 - 2D Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
600	Motor Driven CA Pump Room
600A	Stairway

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

Fire Area ID: 02 - Unit 1 Motor Driven CA Pump Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring available in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action

02. Auxiliary Building 10 CFR50 Appendix R III.G.2.c Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the unprotected steel supports penetrating the fire rated barriers separating redundant safe shutdown system components (pumps) as required by Section III.G.2.c of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- Low combustible loading in area.
- Fire detection is installed over the pumps.
- Automatic suppression is installed over the pumps.
- Manual suppression (portable extinguishers and hose stations) is available for fire brigade response.

The areas affected by the deviation are in the auxiliary building on elevations 716 and 733 feet. Fire areas affected include 2, 2A, 3, 3A, 4, and 14. The walls, floors, and ceilings of these fire areas are of reinforced concrete construction and provide 3-hour fire rated barriers. Mechanical and electrical penetrations in rated barriers are sealed with an approved 3-hour silicone foam seal or have been qualified by a fire test. HVAC ducts are provided with 1-1/2-hour UL fire rated dampers.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Licensing Action

03. Auxiliary Building Expansion Joint Deviation

Licensing Basis

Deviation request per the 8/3/1984 Duke letter to the NRC provides the following justification for the cork seismic expansion joints provided in the 3 hour fire rated floor and wall assemblies as required by Section III.G.2.a of App R, which was approved by the NRC in a letter dated 5/15/1989.

- Predominant combustible in the area is cable insulation.
- Fire detectors are installed on either side of the seismic gaps.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The floors, walls, and ceilings are 12 to 24 inches thick.
- The limited exposed area of the cork.
- The burning characteristics of the cork.
- The combustibles are not installed directly at the seismic gaps.
- In the event a fire develops and transmits heat through the gaps and damages safe shutdown cables, the safe shutdown system is available and is independent of the areas involved.

The NRC approved Duke's deviation request in a letter dated 5/15/1989.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0002, Sect. 9.2.1 Fire Exposure to Unprotected Steel Hangers for HVAC Ducts
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Supplement No. 2 of The Safety Evaluation Report states, "The applicant has further agreed to provide fire proofed supports for those HVAC ducts in safety related areas to ensure the integrity of the barrier penetration between the duct work, including the damper and the fire barrier." Response to Appendix A to Branch Technical Position 9.5-1 states, "Where Control Area Ventilation System ducts penetrate fire barriers, supports are located within five feet of each penetration on each side of the barrier. In areas where fire loading analysis indicates a need, the supports are fire proofed to a rating equivalent to the damper located in the penetration." This evaluation analyzed the Turbine and Motor Driven Feedwater Pump Rooms specifically the four HVAC ducts (two for Unit 1, two for Unit 2) penetrating the walls separating the motor and turbine driven pumps. The purpose of this calculation is to perform a fire hazards analysis to determine if the pyrocrete currently protecting some HVAC hangers can be removed or abandoned in place without increasing the risk of collapse of the ducts due to fire. The calculation determined the pyrocrete material can be removed or abandoned in place based on the following: • Low in situ and transient combustible loading • Fixed automatic suppression • Room geometry • Area fire detection • Fire Brigade response. This meets the requirements of the Response to Appendix A to Branch Technical Position 9.5-1, and therefore does not require further analysis.

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.3 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the Turbine Driven CA (TDCA) Pump Rooms and Motor Driven CA (MDCA) Pump Rooms. The calculation determined the fire barrier is considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Low quantity of in-situ and transient combustibles

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	Engineering Evaluations
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

- Area fixed automatic suppression systems
- Administrative controls for hot work and combustible loading
- Area fire detection
- Penetration seal construction.

Due to the conditions identified above and the presence of the SSF, a fire in the MDCA or TDCA Pump Rooms is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 05 Fire Protection Evaluation For Over Sized Pipe Penetration
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at ten (10) penetrations (716-16.1-12, 716-16.1-13, 2-716-108.1-6, 733-92.1-1, 733-92.1-2, 750-21.2-1, 750-35.1-1, 750-35.1-2, 750-35.1-3, and 750-178.1-10). These seal configurations do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. In each case, the pipe size and opening size exceeds the limitation of the associated typical detail design. Each of these penetrations is located in a NRC committed fire barrier. The calculation determined the penetration seals currently installed at penetrations identified are adequate for the hazard. In all cases the present seal configuration has been demonstrated as capable of providing a 3 hour F rating. Furthermore, applications in 1-1/2 hour rated barriers do not present realistic T rating concerns, due to the location of the seals and the fact that the 1-1/2 hour rated barriers are partial length walls (i.e., they do not provide complete separation of adjacent areas). Applications in 3 hour rated barriers do not result in T rating concerns due to the minimal increase in pipe size (12" actual vs. 10" qualified by test) and the fact that no exposed combustible materials are in contact with or adjacent to these penetrations. Therefore, a fire initiating in one area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, and postulated safe shutdown methods will not be adversely impacted for these plant areas.

Engineering Evaluation ID Revision	MCC-1435.03-00-0013, Sect. 9.2.02 Fire Protection Code Deviations
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the impacts of the following NFPA 13, 1978, deviation: A small ventilation ductwork is partially obstructing two sprinkler heads in the Aux. Feedwater Pump Room No. 600. The calculation determined the sprinkler system is considered adequate for the hazard and the ductwork assembly does not affect the ability of the sprinkler system to control the anticipated fire in the Aux. Feedwater Pump Room given the negligible combustible loading.

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0014, Att. 10 GL 86-10 Evaluation of Gap in Hatch Covers Separating Motor Driven CA Pump Room (FAs 2 & 3) from Train B Electrical Penetration Rooms (FAs 9-11 & 10-12) for Units 1 and 2
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two hatch openings in the Auxiliarly Building floor on elevation 733'. One hatch opening for each unit located at column lines AA-BB/52-53 for Unit 1 and AA-BB/59-60 for Unit 2 separating FA 2 from FA 9-11 and separating FA 3 from FA 10-12 respectively. The calculation determined the barriers to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • the lack of creditable ignition sources in the vicinity of the hatch openings, • lack of transient fire loads near hatches, • IEEE-383 cables are the main insitu combustibles, • the FA's on each side of barrier have separate ventilation systems, • automatic detection in all four FA's, • manual suppression (fire extinguishers and/or hose stations) in all four FA's. • fire brigade response, • automatic suppression in the vicinity of the hatch openings in FA's 2 and 3.

Attachment C

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

Fire Area ID: 02 - Unit 1 Motor Driven CA Pump Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
600	Motor Driven CA Pump Room	E, R	E, R	E, R	Combustible Control: E Detection System, FA 02 Detection: E R Steel plate on ASP (Auxiliary Shutdown Panel): R Water Suppression, FA 02 Suppression: E R
600A	Stairway	None	None	None	None

Title Fire Risk Evaluation for Fire Area 02

Risk Summary The delta CDF is above the screening acceptance criteria of 1E-07/rx-yr (CDF) for acceptable risk but within the acceptance thresholds in RG 1.174. The delta LERF is below the screening acceptance criteria of 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [1] 2.37E-07

Δ LERF Units: [1] 5.60E-09

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The risk acceptance criteria are met provided the suppression systems function as designed and the installed internal steel plate providing train separation remains in place in the ASP. The installed detection system is required to meet risk criteria to ensure the fire brigade response is effectively initiated. The scenarios bound potential fuel packages which can reasonably be expected to occur in this area. The transient scenario is not the major contributor to the overall risk; therefore, additional administrative controls would not provide an appreciable improvement in the overall risk. The ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

Attachment C

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-01 (O-2-009)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of power (loss of offsite power and safety diesels not credited for this area) before closure can be accomplished. Also, PORV can spuriously open due to failure of cable 1*NC 909. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0031B - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-02 (O-2-009)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of power (loss of offsite power and safety diesels not credited for this area) before closure can be accomplished. Also, PORV can spuriously open due to failure of cable 1*NC 908. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-03 (O-2-009)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of power (loss of offsite power and safety diesels not credited for this area) before closure can be accomplished. Also, PORV can spuriously open due to failure of cable 1*NC 909. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0035B - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-04 (OP-2-001)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXG is not diesel backed. Either 1CS VA0018 or 1CA VA0004 is required closed to preclude air entrapment concerns. 1CA-4 could spuriously open due to failure of cables 1 CA 515 or 1 CA 536. 1CS-18 could also spuriously open due to failure of cables 1 CA 515 or 1 CA 536. This failure condition may 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.
Component(s)	1CA VA0004 - Unit 1 Auxiliary Feedwater Pumps Suction from Upper Surge Tank Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-05 (OP-2-001)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXG is not diesel backed. Either 1CS VA0018 or 1CA VA0004 is required closed to preclude air entrapment concerns. 1CA-4 could spuriously open due to failure of cables 1 CA 515 or 1 CA 536. 1CS-18 could also spuriously open due to failure of cables 1 CA 515 or 1 CA 536. This failure condition may 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.
Component(s)	1CS VA0018 - Unit 1 Auxiliary Feedwater Pumps Suction from Upper Surge Tank Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-02-06 (OP-2-002)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXB is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 1CM VA0265 could spuriously open due to failure of cables 1 CA 515 or 1 CA536. This failure condition may 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.
Component(s)	1CM VA0265 - Unit 1 Hotwell Auxiliary Feedwater Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-02-08 (OP-2-004)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXC is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 1CA VA0006 could spuriously open due to failure of cables 1 CA 515 or 1 CA536. This failure condition may 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.
Component(s)	1CA VA0006 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Condensate Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-09 (PH-2-003)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-10 (PH-2-003)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-11 (J226)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cable 1*NC 908. The respective NC block valve is affected by assumed loss of off-site power and safety diesels not credited for this area. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0034A - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-14 (PH-2-006)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation due to failure of cables 1*CA 517 and 1*CA 519 until 1EMXA4 is swapped to its alternate power source. The credited TDCAP, which starts on loss of offsite power, will be damaged if the suction valve 1CA7AC goes closed. This component automatically goes to its required position (open) when 1EMXA4 is swapped. Circuit design removes possible cable failures upon timely transfer to the SSF. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0007AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-15 (PH-2-007)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. If valve is repowered, a spurious operation can occur due to failure of cable 1 CA 515 or 1 CA 536. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-16 (OP-2-026)
VFDR	This component, which is normally open, required open for HSB, is affected by multiple cables causing spurious operations. Valve is required to de-energize in order to open to allow manual throttling using MOV 1CA VA0066AC for proper CA flow to S/G 1A. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0064AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G control valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-17 (OP-2-026)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by multiple cables causing spurious operations. Valve is required to de-energize in order to open to allow manual throttling using MOV 1CA VA0054AC for proper S/G 1B CA flow. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0052AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G control valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-02-18 (OP-2-026)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by multiple cables causing spurious operations. Valve is required to de-energize in order to open valve to allow manual throttling using MOV 1CA VA0050B for proper S/G 1C CA flow. MOV 1CA VA0050B can be affected by spurious operation due to failure of cable 1*CA 528. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0048AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1C S/G control valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-02-19 (PH-2-012)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation due to failure of cable 1*CA 528. The TDCAP is manually started as part of SSF transfer but manual control of the TDCAP is not available since it would require access through the affected fire area. The CA manual valve (1CA-35) and air-operated valve (1CA-36AB), for Steam Generator 1D, are located in the affected area, therefore this action is required to throttle flow of the TDCA Pump feed to the unused Steam Generator 1D to prevent overfill (MSO #29) This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0038B - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1D S/G Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-20 (PH-2-012)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation due to failure of cable 1*CA 528. The TDCAP is manually started as part of SSF transfer but manual control of the TDCAP is not available since it would require access through the affected fire area. The CA manual valve (1CA-47) and air-operated valves (1CA-48AB), for S/G 1C, are located in the affected area. Therefore, this action is required to throttle flow of the TDCA Pump feed to credited Steam Generator 1C. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0050B - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1C S/G Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-02-21 (PH-2-012)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. Valve 1CA VA0054AC goes full open on transfer to SSF. However, prior to SSF transfer valve is subject to spurious operation due to failure of cable 1*CA 519. Turbine driven CA pump control panel is not available since you have to traverse the affected fire area to get there. The CA manual valve (1CA-51) and air-operated valve (1CA-52AB) are located in the affected area. Therefore, this action is required to throttle flow of the TDCA Pump feed to Steam Generator 1B. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0054AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-02-22 (PH-2-012)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. Valve 1CA VA0066AC goes full open on transfer to SSF. However, prior to SSF transfer valve is subject to spurious operation due to failure of cable 1*CA 519. Turbine driven CA pump control panel is not available since you have to traverse the affected fire area to get there. The CA manual valve (1CA-63) and air-operated valve (1CA-64AB) are located in the affected area. Therefore, this action is required to throttle flow of the TDCA Pump feed to the Steam Generator 1A. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0066AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-23 (PH-2-014)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (1NV PU0015 and 1NV PU0016) are subject to cable damage which can cause spurious operation, loss of control, or loss of control power. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0001 - 1A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-24 (PH-2-014)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (1NV PU0015 and 1NV PU0016) are subject to cable damage which can cause spurious operation, loss of control, or loss of control power. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0002 - 1B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-25 (PH-2-014)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (1NV PU0015 and 1NV PU0016) are subject to cable damage which can cause spurious operation, loss of control, or loss of control power. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0003 - 1C Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-26 (PH-2-014)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (1NV PU0015 and 1NV PU0016) are subject to cable damage which can cause spurious operation, loss of control, or loss of control power. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0004 - 1D Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-27 (OP-2-025)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. Valve 1CA VA0066AC goes full open on transfer to SSF. However, prior to SSF transfer valve is subject to spurious operation due to failure of cable 1*CA 519. There are no further controls at the SSF to close and open valve. The CA manual valve (1CA-63) and air-operated valve (1CA-64AB) are located in the affected area. Therefore, this action is required to throttle flow of the TDCA Pump feed to the Steam Generator 1A. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0066AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-02-28 (OP-2-025)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. Valve 1CA VA0054AC goes full open on transfer to SSF. However, prior to SSF transfer valve is subject to spurious operation due to failure of cable 1*CA 519. There are no further controls at the SSF to close and open valve. The CA manual valve (1CA-51) and air-operated valve (1CA-52AB) are located in the affected area. Therefore, this action is required to throttle flow of the TDCA Pump feed to the Steam Generator 1B. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0054AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-29 (PH-2-019)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cable 1*NC 909. The respective NC block valve is affected by assumed loss of off-site power and safety diesels not credited for this area. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0032B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-30 (PH-2-019)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cable 1*NC 909. The respective NC block valve is affected by assumed loss of off-site power and safety diesels not credited for this area. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0036B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-31 (PH-2-023)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0083 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0083 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0078 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0078 or 1SM VA0083 is required closed. Valve 1SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0083 - A Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-32 (PH-2-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0089 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0089 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0084 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0084 or 1SM VA0089 is required closed. Valve 1SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0089 - B Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-02-33 (PH-2-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0095 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0095 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0090 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0090 or 1SM VA0095 is required closed. Valve 1SM VA0095 s assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0095 - C Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-02-34 (PH-2-026)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0101 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0101 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0096 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0096 or 1SM VA0101 is required closed. Valve 1SM VA0101 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0101 - D Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-35 (PH-2-029)
VFDR	This component, which is normally cycled, required off for HSB, is affected by numerous cable failures which can cause spurious operation, loss of control, or loss of power. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRA - Backup Pressurizer Heater Group 1A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-36 (PH-2-029)
VFDR	This component, which is normally cycled, required off for HSB, is affected by numerous cable failures which can cause spurious operation, loss of control, or loss of power. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-02-37 (PH-2-029)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRC can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRC - Pressurizer Heater Group 1C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	02 - Unit 1 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-02-38 (PH-2-029)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRD can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRD - Pressurizer Heater Group 1D
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID: 02A - Unit 1 Turbine Driven CA Pump Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based
Fire Area Definition

Room ID	Description
600B	Turbine Driven Aux FW Pump

Attachment C

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using B train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using B train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, B train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by B train feeding S/G C and D. Main feed is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train B) provided in the control room.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train B auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action

02. Auxiliary Building 10 CFR50 Appendix R III.G.2.c Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the unprotected steel supports penetrating the fire rated barriers separating redundant safe shutdown system components (pumps) as required by Section III.G.2.c of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- Low combustible loading in area.
- Fire detection is installed over the pumps.
- Automatic suppression is installed over the pumps.
- Manual suppression (portable extinguishers and hose stations) is available for fire brigade response.

The areas affected by the deviation are in the auxiliary building on elevations 716 and 733 feet. Fire areas affected include 2, 2A, 3, 3A, 4, and 14. The walls, floors, and ceilings of these fire areas are of reinforced concrete construction and provide 3-hour fire rated barriers. Mechanical and electrical penetrations in rated barriers are sealed with an approved 3-hour silicone foam seal or have been qualified by a fire test. HVAC ducts are provided with 1-1/2-hour UL fire rated dampers.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0002, Sect. 9.2.1 Fire Exposure to Unprotected Steel Hangers for HVAC Ducts
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Supplement No. 2 of The Safety Evaluation Report states, "The applicant has further agreed to provide fire proofed supports for those HVAC ducts in safety related areas to ensure the integrity of the barrier penetration between the duct work, including the damper and the fire barrier." Response to Appendix A to Branch Technical Position 9.5-1 states, "Where Control Area Ventilation System ducts penetrate fire barriers, supports are located within five feet of each penetration on each side of the barrier. In areas where fire loading analysis indicates a need, the supports are fire proofed to a rating equivalent to the damper located in the penetration." This evaluation analyzed the Turbine and Motor Driven Feedwater Pump Rooms specifically the four HVAC ducts (two for Unit 1, two for Unit 2) penetrating the walls separating the motor and turbine driven pumps. The purpose of this calculation is to perform a fire hazards analysis to determine if the pyrocrete currently protecting some HVAC hangers can be removed or abandoned in place without increasing the risk of collapse of the ducts due to fire. The calculation determined the pyrocrete material can be removed or abandoned in place based on the following: • Low in situ and transient combustible loading • Fixed automatic suppression • Room geometry • Area fire detection • Fire Brigade response. This meets the requirements of the Response to Appendix A to Branch Technical Position 9.5-1, and therefore does not require further analysis.

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.3 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the Turbine Driven CA (TDCA) Pump Rooms and Motor Driven CA (MDCA) Pump Rooms. The calculation determined the fire barrier is considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Low quantity of in-situ and transient combustibles

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	Engineering Evaluations
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

- Area fixed automatic suppression systems
- Administrative controls for hot work and combustible loading
- Area fire detection
- Penetration seal construction.

Due to the conditions identified above and the presence of the SSF, a fire in the MDCA or TDCA Pump Rooms is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 05 Fire Protection Evaluation For Over Sized Pipe Penetration
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at ten (10) penetrations (716-16.1-12, 716-16.1-13, 2-716-108.1-6, 733-92.1-1, 733-92.1-2, 750-21.2-1, 750-35.1-1, 750-35.1-2, 750-35.1-3, and 750-178.1-10). These seal configurations do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. In each case, the pipe size and opening size exceeds the limitation of the associated typical detail design. Each of these penetrations is located in a NRC committed fire barrier. The calculation determined the penetration seals currently installed at penetrations identified are adequate for the hazard. In all cases the present seal configuration has been demonstrated as capable of providing a 3 hour F rating. Furthermore, applications in 1-1/2 hour rated barriers do not present realistic T rating concerns, due to the location of the seals and the fact that the 1-1/2 hour rated barriers are partial length walls (i.e., they do not provide complete separation of adjacent areas). Applications in 3 hour rated barriers do not result in T rating concerns due to the minimal increase in pipe size (12" actual vs. 10" qualified by test) and the fact that no exposed combustible materials are in contact with or adjacent to these penetrations. Therefore, a fire initiating in one area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, and postulated safe shutdown methods will not be adversely impacted for these plant areas.

Engineering Evaluation ID Revision	MCC-1435.03-00-0014, Part 1 Generic Letter 86-10 Evaluations for Fire Protection Features
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the in-situ and transient fires in the Unit 1 and Unit 2 TDCA Pump Rooms (Fire Areas 2A & 3A) to determine if there are locations of in -situ and transient fires that could cause damage to Train B cables routed through the TDCA Pump Rooms. The Train B cables in the Pump Rooms are protected by 1- hour rated HEMYC fire barrier wrap. The calculation determined the HEMYC fire barrier wraps to be adequate for the hazard since the hot gas layer plume temperature did not exceed the temperature needed for HEMYC shrinkage and therefore the Train B cables were protected from a potential fire in the TDCA Pump Rooms. This is due to the limited transient and in-situ combustibles in the TDCA Pump Rooms.

Attachment C

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

Fire Area ID: 02A - Unit 1 Turbine Driven CA Pump Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
600B	Turbine Driven Aux FW Pump	E, R	E	E	Combustible Control: E Detection System, FA 02A Detection: E Gaseous Suppression, FA 02A - Halon Suppression: E R

Title Fire Risk Evaluation for Fire Area 02A

Risk Summary The delta CDF is slightly above the screening acceptance criteria of 1E-07/rx-yr but within the acceptance thresholds in RG 1.174. The delta LERF is below the screening acceptance criteria of 1E-08/rx-yr. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [1] 2.53E-07

Δ LERF Units: [1] 6.67E-09

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and the balance of defense in depth is maintained. The risk acceptance criteria are met with margin to account for analytical methods associated with fire scenarios, provided the halon suppression system functions as designed. The halon system, while required for MCA and severe pump fire scenario, also provides additional margin to account for uncertainties associated with the other analyzed scenarios. Given the requirements for the halon system and its associated detectors, it is not expected that a fire scenario would develop which would invalidate the results presented above for delta CDF or LERF and MCA. In the event of no intervention by the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the analyzed scenarios.Given the fire protection systems/features required to meet the risk analysis, DID balance is maintained. The ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-2A-01 (O-2A-002)
VFDR	This component, which is normally on, required on for HSB, is affected by cable failure. Failure of cable 1*ATC 2403 could cause spurious pump start, pump stop or loss of pump control. Cable is wrapped by degraded 1-hr. HEMYC with automatic suppression and detection. This variance shall be evaluated without any credit for HEMYC and automatic suppression and detection. This failure condition may challenge the 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.
Component(s)	1NV PU0016 - 1B Charging Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-02 (O-2A-003)
VFDR	This component, which is normally on, required on for HSB, is affected by cable failure. Failure of cable 1*ATC 2403 could cause spurious pump start, pump stop or loss of pump control. Cable is wrapped by degraded 1-hr. HEMYC with automatic suppression and detection. This variance shall be evaluated without any credit for HEMYC and automatic suppression and detection. This failure condition may challenge 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.
Component(s)	1RN PU0004 - 1B Nuclear Service Water Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-03 (O-2A-005)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 1A or 1B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 1 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCA1) and Pressurizer Heater B (DCB1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater Groups 1A and 1B are unavailable due to spurious and DC control power cable failures. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-2A-04 (OP-2A-001)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXG is not diesel backed. Either 1CS VA0018 or 1CA VA0004 is required closed to preclude air entrapment concerns. 1CA-4 could spuriously open due to failure of cables 1 CA 515 or 1 CA 536. 1CS-18 could also spuriously open due to failure of cables 1 CA 515 or 1 CA 536. This failure condition may 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.
Component(s)	1CA VA0004 - Unit 1 Auxiliary Feedwater Pumps Suction from Upper Surge Tank Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-2A-05 (OP-2A-001)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXG is not diesel backed. Either 1CS VA0018 or 1CA VA0004 is required closed to preclude air entrapment concerns. 1CA-4 could spuriously open due to failure of cables 1 CA 515 or 1 CA 536. 1CS-18 could also spuriously open due to failure of cables 1 CA 515 or 1 CA 536. This failure condition may 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.
Component(s)	1CS VA0018 - Unit 1 Auxiliary Feedwater Pumps Suction from Upper Surge Tank Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-2A-06 (OP-2A-002)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXC is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 1CA VA0006 could spuriously open due to failure of cables 1 CA 515 or 1 CA 536. This failure condition may 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.
Component(s)	1CA VA0006 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Condensate Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-2A-07 (OP-2A-003)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXB is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 1CM VA0265 could spuriously open due to failure of cables 1 CA 515 or 1 CA 536. This failure condition may 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.
Component(s)	1CM VA0265 - Unit 1 Hotwell Auxiliary Feedwater Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-2A-08 (OP-2A-004)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. If valve is repowered, a spurious operation can occur due to failure of cable 1 CA 515 or 1 CA 536. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. This failure condition may 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.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-09 (OP-2A-012)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-2A-10 (OP-2A-012)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-11 (OP-2A-013)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to cable failure. The letdown orifice valves (1NV-35A, 1NV-457A, and 1NV-458A) have cable failures that may prevent Letdown isolation valves 1NV-1A and 1NV-2A from closing. The cable failure (1*ATC 202) for valves 1NV-35A, 1NV-457A, and 1NV-458A may cause spurious operation of these valves. 1NV-1A and 1NV-2A are provided with an interlock that prevents the opening of these valves unless 1NV-457A, 1NV-458A, and 1NV-35A are closed. Another interlock prevents these valves from closing while 1NV-457A, 1NV -458A, and 1NV-35A are open, thus the interlock scheme between the valves may prevent the letdown isolation valves from closing due to cable failures in the letdown orifice valve circuitry. Letdown isolation can be accomplished with an operator action to de-energize and close 1NV-1A or 1NV-2A. 1NV VA0007B functions correctly for this fire area (MSO #6 and #7). This failure condition may challenge the 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.
Component(s)	1NV VA0001A - Unit 1 Reactor Coolant Letdown Isolation Valve to Regenerative Heat Exchanger
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-12 (OP-2A-013)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to cable failure. The letdown orifice valves (1NV-35A, 1NV-457A, and 1NV-458A) have cable failures that may prevent Letdown isolation valves 1NV-1A and 1NV-2A from closing. The cable failure (1*ATC 202) for valves 1NV-35A, 1NV-457A, and 1NV-458A may cause spurious operation of these valves. 1NV-1A and 1NV-2A are provided with an interlock that prevents the opening of these valves unless 1NV-457A, 1NV-458A, and 1NV-35A are closed. Another interlock prevents these valves from closing while 1NV-457A, 1NV -458A, and 1NV-35A are open, thus the interlock scheme between the valves may prevent the letdown isolation valves from closing due to cable failures in the letdown orifice valve circuitry. Letdown isolation can be accomplished with an operator action to de-energize and close 1NV-1A or 1NV-2A. 1NV VA0007B functions correctly for this fire area (MSO #6 and #7). This failure condition may challenge the 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.
Component(s)	1NV VA0002A - Unit 1 Reactor Coolant Letdown Isolation Valve to Regenerative Heat Exchanger
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-2A-13 (OP-2A-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0026AB - 1D S/G Feed water Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-2A-14 (OP-2A-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0028AB - 1C S/G Feed water Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-2A-15 (OP-2A-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0030AB - 1B S/G Feed water Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-2A-16 (OP-2A-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0035AB - 1A S/G Feed water Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-2A-17 (OP-2A-025)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The TDCAP and its stop (1SA VA0003) and control (1SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 1A. AOV (Air Operated Valve) 1CA VA0064AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 1CA VA0066AC is affected by possible spurious actuation due to failure of cable 1*CA 519. Steam Admission valves 1SA VA0048ABC and 1SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	1CA VA0064AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1A S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-18 (OP-2A-025)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The TDCAP and its stop (1SA VA0003) and control (1SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 1A. AOV 1CA VA0064AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 1CA VA0066AC is affected by possible spurious actuation due to failure of cable 1*CA 519. Steam Admission valves 1SA VA0048ABC and 1SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	1CA VA0066AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1A S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-19 (OP-2A-026)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The TDCAP and its stop (1SA VA0003) and control (1SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 1B. AOV 1CA VA0052AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 1CA VA0054AC is affected by possible spurious actuation due to failure of cable 1*CA 519. Steam Admission valves 1SA VA0048ABC and 1SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	1CA VA0052AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1B S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-2A-20 (OP-2A-026)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The TDCAP and its stop (1SA VA0003) and control (1SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 1B. AOV 1CA VA0052AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 1CA VA0054AC is affected by possible spurious actuation due to failure of cable 1*CA 519. Steam Admission valves 1SA VA0048ABC and 1SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	1CA VA0054AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1B S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-21 (OP-2A-027)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The TDCAP and its stop (1SA VA0003) and control (1SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 1C. AOV 1CA VA0048AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 1CA VA0050B is affected by possible spurious actuation due to failure of cable 1*CA 528. Steam Admission valves 1SA VA0048ABC and 1SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	1CA VA0048AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1C S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-22 (OP-2A-027)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The TDCAP and its stop (1SA VA0003) and control (1SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 1C. AOV 1CA VA0048AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 1CA VA0050B is affected by possible spurious actuation due to failure of cable 1*CA 528. Steam Admission valves 1SA VA0048ABC and 1SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	1CA VA0050B - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1C S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-2A-23 (OP-2A-028)
VFDR	This component, which is normally open, required open for HSB, is affected by the following: The TDCAP and its stop (1SA VA0003) and control (1SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 1D. AOV 1CA VA0036AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 1CA VA0038B is affected by possible spurious actuation due to failure of cable 1*CA 528. Steam Admission valves 1SA VA0048ABC and 1SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	1CA VA0036AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1D S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-24 (OP-2A-028)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following: The TDCAP and its stop (1SA VA0003) and control (1SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 1D. AOV 1CA VA0036AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 1CA VA0038B is affected by possible spurious actuation due to failure of cable 1*CA 528. Steam Admission valves 1SA VA0048ABC and 1SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	1CA VA0038B - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1D S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-25 (OP-2A-029)
VFDR	This component, which is normally cycled, required off for HSB, is affected by spurious actuation due to failure of cable 1*ILE 670. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRA - Backup Pressurizer Heater Group 1A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	02A - Unit 1 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-2A-26 (OP-2A-029)
VFDR	This component, which is normally cycled, required off for HSB, is affected by spurious actuation due to failure of cable 1*ILE 674. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-27 (PH-2A-001)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious actuation due to failure of cable 1*CA 525 or 1*CA 528. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0009B - 1B Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-2A-28 (OP-2A-030)
VFDR	This component, which is normally off, required off for HSB, is affected by spurious operation due to failure of cable 1 NV 677. Pump is required off for inventory control (MSO#20). This failure condition may challenge the 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.
Component(s)	1NV PU0014 - Unit 1 Positive Displacement Charging Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
601	Motor Driven CA Pump Room
601A	Stairway

Attachment C

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring available in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Attachment C

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action 02. Auxiliary Building 10 CFR50 Appendix R III.G.2.c Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the unprotected steel supports penetrating the fire rated barriers separating redundant safe shutdown system components (pumps) as required by Section III.G.2.c of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- Low combustible loading in area.
- Fire detection is installed over the pumps.
- Automatic suppression is installed over the pumps.
- Manual suppression (portable extinguishers and hose stations) is available for fire brigade response.

The areas affected by the deviation are in the auxiliary building on elevations 716 and 733 feet. Fire areas affected include 2, 2A, 3, 3A, 4, and 14. The walls, floors, and ceilings of these fire areas are of reinforced concrete construction and provide 3-hour fire rated barriers. Mechanical and electrical penetrations in rated barriers are sealed with an approved 3-hour silicone foam seal or have been qualified by a fire test. HVAC ducts are provided with 1-1/2-hour UL fire rated dampers.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Licensing Action 03. Auxiliary Building Expansion Joint Deviation

Licensing Basis

Deviation request per the 8/3/1984 Duke letter to the NRC provides the following justification for the cork seismic expansion joints provided in the 3 hour fire rated floor and wall assemblies as required by Section III.G.2.a of App R, which was approved by the NRC in a letter dated 5/15/1989.

- Predominant combustible in the area is cable insulation.
- Fire detectors are installed on either side of the seismic gaps.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The floors, walls, and ceilings are 12 to 24 inches thick.
- The limited exposed area of the cork.
- The burning characteristics of the cork.
- The combustibles are not installed directly at the seismic gaps.
- In the event a fire develops and transmits heat through the gaps and damages safe shutdown cables, the safe shutdown system is available and is independent of the areas involved.

The NRC approved Duke's deviation request in a letter dated 5/15/1989.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0002, Sect. 9.2.1 Fire Exposure to Unprotected Steel Hangers for HVAC Ducts
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Supplement No. 2 of The Safety Evaluation Report states, "The applicant has further agreed to provide fire proofed supports for those HVAC ducts in safety related areas to ensure the integrity of the barrier penetration between the duct work, including the damper and the fire barrier." Response to Appendix A to Branch Technical Position 9.5-1 states, "Where Control Area Ventilation System ducts penetrate fire barriers, supports are located within five feet of each penetration on each side of the barrier. In areas where fire loading analysis indicates a need, the supports are fire proofed to a rating equivalent to the damper located in the penetration." This evaluation analyzed the Turbine and Motor Driven Feedwater Pump Rooms specifically the four HVAC ducts (two for Unit 1, two for Unit 2) penetrating the walls separating the motor and turbine driven pumps. The purpose of this calculation is to perform a fire hazards analysis to determine if the pyrocrete currently protecting some HVAC hangers can be removed or abandoned in place without increasing the risk of collapse of the ducts due to fire. The calculation determined the pyrocrete material can be removed or abandoned in place based on the following: • Low in situ and transient combustible loading • Fixed automatic suppression • Room geometry • Area fire detection • Fire Brigade response. This meets the requirements of the Response to Appendix A to Branch Technical Position 9.5-1, and therefore does not require further analysis.

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.3 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the Turbine Driven CA (TDCA) Pump Rooms and Motor Driven CA (MDCA) Pump Rooms. The calculation determined the fire barrier is considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Low quantity of in-situ and transient combustibles

- Area fixed automatic suppression systems
- Administrative controls for hot work and combustible loading
- Area fire detection
- Penetration seal construction.

Due to the conditions identified above and the presence of the SSF, a fire in the MDCA or TDCA Pump Rooms is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 02 Fire Protection Evaluation for Spare Penetrations Sealed on One Side Only
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at penetrations 733-69.1-7, 2-733-175.0-2, 2-733-179.1-1, 2-733-179.1-2, 2-733-179.1-9, 2-733-179.1-10, 2-733-180.1-3, and 2-733-180.1-4. These penetrations contain seal configurations that do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. Each of these penetrations is located in a NRC committed 3-hour fire barrier. The calculation determined the penetration seals currently installed at the penetrations identified are considered adequate for the hazard. This is due to the following: • Both the Type CSFS Gedney Plug installed at penetration 733-69.1-7 and the single steel conduit cap installed at all remaining penetrations will function as 3 hour F rated penetration seal assemblies • Absence of combustible materials in close proximity to either side of these penetrations Because a fire initiating in any area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, postulated safe shutdown methods will not be adversely impacted for these plant areas.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 05 Fire Protection Evaluation For Over Sized Pipe Penetration
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at ten (10) penetrations (716-16.1-12, 716-16.1-13, 2-716-108.1-6, 733-92.1-1, 733-92.1-2, 750-21.2-1, 750-35.1-1, 750-35.1-2, 750-35.1-3, and 750-178.1-10). These seal configurations do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. In each case, the pipe size and opening size exceeds the limitation of the associated typical detail design. Each of these penetrations is located in a NRC committed fire barrier. The calculation determined the penetration seals currently installed at penetrations identified are adequate for the hazard. In all cases the present seal configuration has been demonstrated as capable of providing a 3 hour F rating. Furthermore, applications in 1-1/2 hour rated barriers do not present realistic T rating concerns, due to the location of the seals and the fact that the 1-1/2 hour rated barriers are partial length walls (i.e., they do not provide complete

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	Engineering Evaluations
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

separation of adjacent areas). Applications in 3 hour rated barriers do not result in T rating concerns due to the minimal increase in pipe size (12" actual vs. 10" qualified by test) and the fact that no exposed combustible materials are in contact with or adjacent to these penetrations. Therefore, a fire initiating in one area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, and postulated safe shutdown methods will not be adversely impacted for these plant areas.

Engineering Evaluation ID	MCC-1435.03-00-0014, Att. 03 Generic Letter 86-10 Evaluations for Fire Protection Features
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the in-situ and transient fires in the Unit 2 Motor Driven CA Pump Room (Fire Area 3) to determine if there are locations of in-situ and transient fires that could cause damage to the 2CA161C, 2CA162C, and 0RN4AC valves and their associated cables. The cables are IEEE-383 qualified cables with thermoset insulation and a PVC (thermoplastic) jacketed covering over the outer metal armor. The calculation determined the IEEE-383 qualified cables to be 'adequate for the hazard'. Four of the five postulated fire scenarios did not present an exposure fire for a duration which would cause damage to the cables. This is due to the limited transient and in-situ combustibles in the room. Although the fifth postulated fire scenario would cause damage to the 2CA161C and 2CA162C associated cables, this does not adversely affect the ability to perform safe shutdown functions. The normal water source is through the 2CA7A valve, which is also in the fire area but is protected by a pre-existing operator action. The normal supply of water is considered to be available for up to 14 hours.

Engineering Evaluation ID	MCC-1435.03-00-0014, Att. 10 GL 86-10 Evaluation of Gap in Hatch Covers Separating Motor Driven CA Pump Room (FAs 2 & 3) from Train B Electrical Penetration Rooms (FAs 9-11 & 10-12) for Units 1 and 2
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two hatch openings in the Auxiliarly Building floor on elevation 733'. One hatch opening for each unit located at column lines AA-BB/52-53 for Unit 1 and AA-BB/59-60 for Unit 2 separating FA 2 from FA 9-11 and separating FA 3 from FA 10-12 respectively. The calculation determined the barriers to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • the lack of creditable ignition sources in the vicinity of the hatch openings, • lack of transient fire loads near hatches, • IEEE-383 cables are the main insitu combustibles, • the FA's on each side of barrier have separate ventilation systems, • automatic detection in all four FA's, • manual suppression (fire extinguishers and/or hose stations) in all four FA's. • fire brigade response, • automatic suppression in the vicinity of the hatch openings in FA's 2 and 3.

Attachment C

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

Fire Area ID: 03 - Unit 2 Motor Driven CA Pump Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
601	Motor Driven CA Pump Room	E, R	E, R	E, R	Combustible Control: E Detection System, FA 03 Detection: E R Steel plate (1 in) between redundant trains in ASP: R Water Suppression, FA 03 Suppression: E R
601A	Stairway	None	None	None	None

Title Fire Risk Evaluation for Fire Area 03

Risk Summary The delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [2] 6.00E-08

Δ LERF Units: [2] 1.90E-09

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The risk acceptance criteria are met provided the suppression systems function as designed and the installed internal steel plate providing train separation remains in place in the ASP. The installed detection system is required to meet risk criteria to ensure the fire brigade response is effectively initiated. The scenarios bound potential fuel packages which can reasonably be expected to occur in this area. The transient scenario is not the major contributor to the overall risk, therefore, additional administrative controls would not provide an appreciable improvement in the overall risk. The ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-01 (O-3-001)
VFDR	This component, which is normally closed, required open for HSB, is affected by being in the fire area. Valves 2CA-161C and 2CA-162C are required to be opened to support SSF operation. Procedure AP/2/A/5500/24 has instructions to energize, open valves, then de-energize the valves at the SDSP, however both of the valves are located in Fire Area 3 and there are multiple cable failures that may cause a loss of power, control, and indication if energized. 2CA-161C and 2CA-162C are normally closed and de-energized. Therefore, they must be manually opened prior to inventory depletion of the CA Storage Tank. The valves are available for manual operation after the fire is extinguished. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2CA VA0161C - Unit 2 Auxiliary Feedwater Pumps Suction Header from Unit 2 Nuclear Service Water Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-02 (O-3-001)
VFDR	This component, which is normally closed, required open for HSB, is affected by being in the fire area. Valves 2CA-161C and 2CA-162C are required to be opened to support SSF operation. Procedure AP/2/A/5500/24 has instructions to energize, open valves, then de-energize the valves at the SDSP, however both of the valves are located in Fire Area 3 and there are multiple cable failures that may cause a loss of power, control, and indication if energized. 2CA-161C and 2CA-162C are normally closed and de-energized. Therefore, they must be manually opened prior to inventory depletion of the CA Storage Tank. The valves are available for manual operation after the fire is extinguished. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2CA VA0162C - Unit 2 Auxiliary Feedwater Pumps Suction Header from Unit 2 Nuclear Service Water Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-03 (J236)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cable 2*NC 799. The respective NC block valve is affected by assumed loss of off-site power and safety diesels not credited for this area. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0034A - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-04 (O-3-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of power (loss of offsite power and safety diesels not credited for this area) before closure can be accomplished. Also, PORV can spuriously open due to failure of cable 2*NC 798. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0031B - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-05 (O-3-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of power (loss of offsite power and safety diesels not credited for this area) before closure can be accomplished. Also, PORV can spuriously open due to failure of cable 2*NC 799. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-06 (O-3-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of power (loss of offsite power and safety diesels not credited for this area) before closure can be accomplished. Also, PORV can spuriously open due to failure of cable 2*NC 798. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0035B - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-07 (OE-3-001)
VFDR	This component, which is normally open, required open for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 2*CA 557. Valve can fail as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may 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.
Component(s)	2CA VA0007A - Unit 2 Turbine Driven Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-08 (OP-3-017)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 2EPDMXMXB is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 2CM VA0265 could spuriously open due to failure of cables 2 CA 515 or 2CM 603. This failure condition may 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.
Component(s)	2CM VA0265 - Unit 2 Hotwell Auxiliary Feedwater Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-03-09 (OP-3-018)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0205 - 2C Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-03-10 (OP-3-018)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0206 - 2D Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-11 (OP-3-018)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0207 - 2A Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-03-14 (PH-3-003)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. If valve is repowered, a spurious operation can occur due to failure of cable 2 CA 515 or 2 CA 586. Power supply 2EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-15 (PH-3-004)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation from failure of cable 2*CA 557. The credited TDCAP, which starts on loss of offsite power, will be damaged if the suction valve 2CA-7A goes closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0007A - Unit 2 Turbine Driven Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-16 (PH-3-005)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation from failure of cables 1*RN 604 or 1*RN 831. This also has a IN 92-18 concern. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	0RN VA0004AC - 1B & 2B RN SUPPLY FROM RC ISOL
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-17 (OP-3-027)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. Valve 2CA VA0054AC goes full open on transfer to SSF. However, prior to SSF transfer valve is subject to spurious operation due to failure of cable 2*CA 519. There are no further controls at the SSF to close and open valve. The CA manual valve (2CA-51) and air-operated valve (2CA-52AB) are located in the affected area, therefore this action is required to throttle flow of the TDCA Pump feed to the Steam Generator 2B. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0054AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-18 (OP-3-027)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. Valve 2CA VA0066AC goes full open on transfer to SSF. However, prior to SSF transfer valve is subject to spurious operation due to failure of cable 2*CA 519. There are no further controls at the SSF to close and open valve. The CA manual valve (2CA-63) and air-operated valve (2CA-64AB) are located in the affected area, therefore this action is required to throttle flow of the TDCA Pump feed to the Steam Generator 2A. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0066AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-19 (PH-3-011)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (2NV PU0015 and 2NV PU0016) are subject to cable damage which can cause spurious operation, loss of control, or loss of control power. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available due to non-credited DC power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the safety breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0001 - 2A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-20 (PH-3-011)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (2NV PU0015 and 2NV PU0016) are subject to cable damage which can cause spurious operation, loss of control, or loss of control power. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available due to non-credited DC power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the safety breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0002 - 2B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-21 (PH-3-011)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (2NV PU0015 and 2NV PU0016) are subject to cable damage which can cause spurious operation, loss of control, or loss of control power. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available due to non-credited DC power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the safety breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0003 - 2C Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-22 (PH-3-011)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps (2NV PU0015 and 2NV PU0016) are subject to cable damage which can cause spurious operation, loss of control, or loss of control power. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available due to non-credited DC power. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the safety breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0004 - 2D Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-23 (PH-3-014)
VFDR	This component, which is normally cycled, required off for HSB, is affected by numerous cable failures which can cause spurious operation, loss of control, or loss of power. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRA - Backup Pressurizer Heater Group 2A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-24 (PH-3-014)
VFDR	This component, which is normally cycled, required off for HSB, is affected by numerous cable failures which can cause spurious operation, loss of control, or loss of power. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-25 (PH-3-014)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRC can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRC - Pressurizer Heater Group 2C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-26 (PH-3-014)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRD can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRD - Pressurizer Heater Group 2D
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-27 (PH-3-017)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cable 2*NC 798. The respective NC block valve is affected by assumed loss of off-site power and safety diesels not credited for this area. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0032B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-28 (PH-3-017)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cable 2*NC 798. The respective NC block valve is affected by assumed loss of off-site power and safety diesels not credited for this area. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0036B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-30 (PH-3-020)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-31 (PH-3-020)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-32 (PH-3-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0083 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0083 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0078 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0078 or 2SM VA0083 is required closed. Valve 2SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0083 - A Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-03-33 (PH-3-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0089 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0089 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0084 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0084 or 2SM VA0089 is required closed. Valve 2SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0089 - B Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-03-34 (PH-3-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0095 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0095 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0090 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0090 or 2SM VA0095 is required closed. Valve 2SM VA0095 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0095 - C Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-35 (PH-3-026)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0101 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0101 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0096 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0096 or 2SM VA0101 is required closed. Valve 2SM VA0101 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0101 - D Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-03-36 (OP-3-028)
VFDR	This component, which is normally open, required open for HSB, is affected by multiple cables causing spurious operations. Valve is required to de-energize in order to open valve to allow manual throttling using MOV 2CA VA0050B for proper S/G 2C CA flow. MOV 2CA VA0050B can be affected by spurious operation due to failure of cable 2*CA 528. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0048AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-37 (OP-3-028)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by multiple cables causing spurious operations. Valve is required to de-energize in order to open to allow manual throttling using MOV 2CA VA0054AC for proper S/G 2B CA flow. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0052AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-38 (OP-3-028)
VFDR	This component, which is normally open, required open for HSB, is affected by multiple cables causing spurious operations. Valve is required to de-energize in order to open to allow manual throttling using MOV 2CA VA0066AC for proper CA flow to S/G 2A. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0064AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-39 (PH-3-038)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation due to failure of cable 2*CA 528. The TDCAP is manually started as part of SSF transfer, but manual control of the TDCAP is not available since it would require access through the affected fire area. The CA manual valve (2CA-35) and air-operated valve (2CA-36AB), for Steam Generator 2D, are located in the affected area. Therefore, this action is required to throttle flow of the TDCA Pump feed to the unused Steam Generator 2D to prevent overfill (MSO #29). This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0038B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-40 (PH-3-038)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation due to failure of cable 2*CA 528. The TDCAP is manually started as part of SSF transfer, but manual control of the TDCAP is not available since it would require access through the affected fire area. The CA manual valve (2CA-47) and air-operated valves (2CA-48AB), for S/G 2C, are located in the affected area. Therefore, this action is required to throttle flow of the TDCA Pump feed to credited Steam Generator 2C. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0050B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	03 - Unit 2 Motor Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-03-41 (PH-3-038)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. Valve 2CA VA0054AC goes full open on transfer to SSF. However, prior to SSF transfer valve is subject to spurious operation due to failure of cable 2*CA 519. Turbine driven CA pump control panel is not available since you have to traverse the affected fire area to get there. The CA manual valve (2CA-51) and air-operated valve (2CA-52AB) are located in the affected area. Therefore, this action is required to throttle flow of the TDCA Pump feed to Steam Generator 2B. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0054AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-42 (PH-3-038)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. Valve 2CA VA0066AC goes full open on transfer to SSF. However, prior to SSF transfer valve is subject to spurious operation due to failure of cable 2*CA 519. Turbine driven CA pump control panel is not available since you have to traverse the affected fire area to get there. The CA manual valve (2CA-63) and air-operated valve (2CA-64AB) are located in the affected area. Therefore, this action is required to throttle flow of the TDCA Pump feed to the Steam Generator 2A. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0066AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-03-44 (OE-3-002)
VFDR	This component, which is normally open, required open for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cables 1*RN 604 and 1*RN 831. Valve can fail as follows: If actuator stalls in either the OPEN or CLOSE direction, the gearbox will be damaged. Only means of re-positioning valve would be to replace gearbox, or use some type of wrench to place valve in desired position after gearbox and actuator have been removed (Reference MCC 1205.19-00-0084). Repair of the valve and action to open the valve may be required. Failure of cable 1*RN 604 can cause an IN 92-18 concern in the open position. This failure can occur both before and after transfer to the SSF. Failure of both 1*RN 604 and 1*RN 831 can cause a concern in the closed position. This failure can occur only before the transfer to the SSF. This concern is not considered time critical due to volume of water in the CAST. There is approximately 18 hours per references in SLC 16.9.7. The RC water supply and this valve would need to be aligned within this 18 hours. This failure condition may 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.
Component(s)	0RN VA0004AC - 1B & 2B RN SUPPLY FROM RC ISOL
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
601B	Turbine Driven Aux FW Pump

Attachment C

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using B train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using B train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, B train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by B train feeding S/G C and D. Main feed is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train B) provided in the control room.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train B auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action

02. Auxiliary Building 10 CFR50 Appendix R III.G.2.c Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the unprotected steel supports penetrating the fire rated barriers separating redundant safe shutdown system components (pumps) as required by Section III.G.2.c of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- Low combustible loading in area.
- Fire detection is installed over the pumps.
- Automatic suppression is installed over the pumps.
- Manual suppression (portable extinguishers and hose stations) is available for fire brigade response.

The areas affected by the deviation are in the auxiliary building on elevations 716 and 733 feet. Fire areas affected include 2, 2A, 3, 3A, 4, and 14. The walls, floors, and ceilings of these fire areas are of reinforced concrete construction and provide 3-hour fire rated barriers. Mechanical and electrical penetrations in rated barriers are sealed with an approved 3-hour silicone foam seal or have been qualified by a fire test. HVAC ducts are provided with 1-1/2-hour UL fire rated dampers.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0002, Sect. 9.2.1 Fire Exposure to Unprotected Steel Hangers for HVAC Ducts
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Supplement No. 2 of The Safety Evaluation Report states, "The applicant has further agreed to provide fire proofed supports for those HVAC ducts in safety related areas to ensure the integrity of the barrier penetration between the duct work, including the damper and the fire barrier." Response to Appendix A to Branch Technical Position 9.5-1 states, "Where Control Area Ventilation System ducts penetrate fire barriers, supports are located within five feet of each penetration on each side of the barrier. In areas where fire loading analysis indicates a need, the supports are fire proofed to a rating equivalent to the damper located in the penetration." This evaluation analyzed the Turbine and Motor Driven Feedwater Pump Rooms specifically the four HVAC ducts (two for Unit 1, two for Unit 2) penetrating the walls separating the motor and turbine driven pumps. The purpose of this calculation is to perform a fire hazards analysis to determine if the pyrocrete currently protecting some HVAC hangers can be removed or abandoned in place without increasing the risk of collapse of the ducts due to fire. The calculation determined the pyrocrete material can be removed or abandoned in place based on the following: • Low in situ and transient combustible loading • Fixed automatic suppression • Room geometry • Area fire detection • Fire Brigade response. This meets the requirements of the Response to Appendix A to Branch Technical Position 9.5-1, and therefore does not require further analysis.

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.3 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the Turbine Driven CA (TDCA) Pump Rooms and Motor Driven CA (MDCA) Pump Rooms. The calculation determined the fire barrier is considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Low quantity of in-situ and transient combustibles

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	Engineering Evaluations
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

- Area fixed automatic suppression systems
- Administrative controls for hot work and combustible loading
- Area fire detection
- Penetration seal construction.

Due to the conditions identified above and the presence of the SSF, a fire in the MDCA or TDCA Pump Rooms is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID	MCC-1435.03-00-0014, Part 1 Generic Letter 86-10 Evaluations for Fire Protection Features
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the in-situ and transient fires in the Unit 1 and Unit 2 TDCA Pump Rooms (Fire Areas 2A & 3A) to determine if there are locations of in -situ and transient fires that could cause damage to Train B cables routed through the TDCA Pump Rooms. The Train B cables in the Pump Rooms are protected by 1- hour rated HEMYC fire barrier wrap. The calculation determined the HEMYC fire barrier wraps to be adequate for the hazard since the hot gas layer plume temperature did not exceed the temperature needed for HEMYC shrinkage and therefore the Train B cables were protected from a potential fire in the TDCA Pump Rooms. This is due to the limited transient and in-situ combustibles in the TDCA Pump Rooms.

Attachment C

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

Fire Area ID: 03A - Unit 2 Turbine Driven CA Pump Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
601B	Turbine Driven Aux FW Pump	E, R	E	E	Combustible Control: E Detection System, FA 03A Detection: E Gaseous Suppression, FA 03A - Halon Suppression: E R

Title Fire Risk Evaluation for Fire Area 03A

Risk Summary The delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr and 1E-08/rx-yr, respectively. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [2] 8.70E-08

Δ LERF Units: [2] 1.58E-09

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and the balance of defense in depth is maintained. The risk acceptance criteria are met with margin to account for analytical methods associated with fire scenarios, provided the halon suppression system functions as designed. The halon system, while required for MCA and severe pump fire scenario, also provides additional margin to account for uncertainties associated with the other analyzed scenarios, therefore additional DID measures are not required. Given the requirements for the halon system and its associated detectors, it is not expected that a fire scenario would develop which would invalidate the results presented above for delta CDF or LERF and MCA. In the event of no intervention by the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the analyzed scenarios. Given the fire protection systems/features required to meet the risk analysis, DID balance is maintained without imposition of additional requirements. The ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-3A-01 (O-3A-002)
VFDR	This component, which is normally off, required on for HSB, is affected by cable failure. Failure of cable 2*CA 577 could cause spurious pump start, pump stop or loss of pump control. Cable is wrapped by degraded 1-hr. HEMYC with automatic suppression and detection. This variance shall be evaluated without any credit for HEMYC and automatic suppression and detection. This failure condition may 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.
Component(s)	2CA PU0002 - 2B Motor Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-3A-02 (O-3A-003)
VFDR	This component, which is normally on, required on for HSB, is affected by cable failure. Failure of cable 2*ILE 659 could cause spurious pump start, pump stop or loss of pump control. Cable is wrapped by degraded 1-hr. HEMYC with automatic suppression and detection. This variance shall be evaluated without any credit for HEMYC and automatic suppression and detection. This failure condition may challenge 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.
Component(s)	2RN PU0004 - 2B Nuclear Service Water Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-3A-03 (O-3A-004)
VFDR	This component, which is normally on, required on for HSB, is affected by cable failure. Failure of cable 2*ILE 659 could cause spurious pump start, pump stop or loss of pump control. Cable is wrapped by degraded 1-hr. HEMYC with automatic suppression and detection. This variance shall be evaluated without any credit for HEMYC and automatic suppression and detection. This failure condition may challenge the 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.
Component(s)	2NV PU0016 - 2B Charging Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-3A-04 (O-3A-008)
VFDR	This component, which is normally closed, required closed for HSB, is affected by cable failure. Failure of cable 2*NV 573 could spuriously open valves 2NV VA0024B and 2NV VA0025B. Either valve is required closed for NC inventory control (MSO #8). Cable is wrapped by degraded 1-hr. HEMYC with automatic suppression and detection. This variance shall be evaluated without any credit for HEMYC and automatic suppression and detection. This failure condition may challenge the 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.
Component(s)	2NV VA0024B - C Reactor Coolant Loop to Excess Letdown Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-3A-05 (O-3A-008)
VFDR	This component, which is normally closed, required closed for HSB, is affected by cable failure. Failure of cable 2*NV 573 could spuriously open valves 2NV VA0024B and 2NV VA0025B. Either valve is required closed for NC inventory control (MSO #8). Cable is wrapped by degraded 1-hr. HEMYC with automatic suppression and detection. This variance shall be evaluated without any credit for HEMYC and automatic suppression and detection. This failure condition may challenge the 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.
Component(s)	2NV VA0025B - C Reactor Coolant Loop to Excess Letdown Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-3A-06 (O-3A-010)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 2A or 2B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 2 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCB1) and Pressurizer Heater B (DCA1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater Group 2B is unavailable due to a spurious cable concern. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-3A-07 (O-3A-011)
VFDR	This component, which is normally cycled, required off for HSB, is affected by cable failure. Failure of cable 2*ILE 659 could cause spurious actuation. Cable is wrapped by degraded 1-hr. HEMYC with automatic suppression and detection. This variance shall be evaluated without any credit for HEMYC and automatic suppression and detection. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-3A-08 (OP-3A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-3A-09 (OP-3A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-3A-10 (OP-3A-006)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 2EPDMXMXB is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 2CM VA0265 could spuriously open due to failure of cables 2 CA 515 or 2 CM 603. This failure condition may 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.
Component(s)	2CM VA0265 - Unit 2 Hotwell Auxiliary Feedwater Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-3A-11 (OP-3A-007)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. If valve is repowered, a spurious operation can occur due to failure of cable 2 CA 515 or 2 CA 586 or 2CA 630. Power supply 2EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-3A-12 (OP-3A-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0026AB - 2D S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-3A-13 (OP-3A-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0028AB - 2C S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-3A-14 (OP-3A-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0030AB - 2B S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-3A-15 (OP-3A-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0035AB - 2A S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-3A-16 (OP-3A-018)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The TDCAP and its stop (2SA VA0003) and control (2SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 2A. AOV 2CA VA0064AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 2CA VA0066AC is affected by possible spurious actuation due to failure of cable 2*CA 519. Steam Admission valves 2SA VA0048ABC and 2SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	2CA VA0064AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-3A-17 (OP-3A-018)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The TDCAP and its stop (2SA VA0003) and control (2SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 2A. AOV 2CA VA0064AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 2CA VA0066AC is affected by possible spurious actuation due to failure of cable 2*CA 519. Steam Admission valves 2SA VA0048ABC and 2SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	2CA VA0066AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-3A-18 (OP-3A-019)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The TDCAP and its stop (2SA VA0003) and control (2SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 2B. AOV 2CA VA0052AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 2CA VA0054AC is affected by possible spurious actuation due to failure of cable 2*CA 519. Steam Admission valves 2SA VA0048ABC and 2SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	2CA VA0052AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-3A-19 (OP-3A-019)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The TDCAP and its stop (2SA VA0003) and control (2SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 2B. AOV 2CA VA0052AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 2CA VA0054AC is affected by possible spurious actuation due to failure of cable 2*CA 519. Steam Admission valves 2SA VA0048ABC and 2SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	2CA VA0054AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-3A-20 (OP-3A-020)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The TDCAP and its stop (2SA VA0003) and control (2SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 2C. AOV 2CA VA0048AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 2CA VA0050B is affected by possible spurious actuation due to failure of cable 2*CA 528. Steam Admission valves 2SA VA0048ABC and 2SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	2CA VA0048AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-3A-21 (OP-3A-020)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The TDCAP and its stop (2SA VA0003) and control (2SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 2C. AOV 2CA VA0048AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 2CA VA0050B is affected by possible spurious actuation due to failure of cable 2*CA 528. Steam Admission valves 2SA VA0048ABC and 2SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	2CA VA0050B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-3A-22 (OP-3A-021)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The TDCAP and its stop (2SA VA0003) and control (2SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 2D. AOV 2CA VA0036AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 2CA VA0038B is affected by possible spurious actuation due to failure of cable 2*CA 528. Steam Admission valves 2SA VA0048ABC and 2SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	2CA VA0036AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	03A - Unit 2 Turbine Driven CA Pump Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-3A-23 (OP-3A-021)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The TDCAP and its stop (2SA VA0003) and control (2SA VA0004) valves are located in the affected area, and are therefore unable to be credited to prevent a potential overfill condition from unused turbine driven feed to Steam Generator 2D. AOV 2CA VA0036AB has numerous cable failures, which can cause loss of control power and/or spurious operation. MOV 2CA VA0038B is affected by possible spurious actuation due to failure of cable 2*CA 528. Steam Admission valves 2SA VA0048ABC and 2SA VA0049AB also have numerous cable failures that can cause loss of control and/or spurious operation. These valves also can not be credited to prevent overfill. This failure condition may 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.
Component(s)	2CA VA0038B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-3A-24 (OP-3A-022)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Modification OD MD201558 relocated pressure switch 2CAPS5381, as a result cable 2*CA 779 was moved and the HEMYC wrap was removed. PIP M-01-01453 justified the decision not to reinstall the HEMYC fire wrap by stating the control power circuit is ungrounded. Therefore, a short to ground on cable 2*CA 779 will not blow the fuses. However, NEI 00-01 Revision 2 (Appendix B, page 27) recommends that a second short to ground be assumed. Therefore, there is a potential that the fuses may blow. As a result, failure of cable 2*CA 779 may cause a loss of power to the control circuit and fail the valve as-is in the undesired position (closed). The HEMYC wrap was degraded and not a credible 1 hour fire barrier. The valve is required open within 18 hours of starting the Motor Driven CA Pump or prior to inventory depletion of the CA Storage Tank. This failure condition may 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.
Component(s)	2RN VA0162B - Auxiliary Feedwater Assured Supply from Train B Nuclear Service Water
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-3A-25 (PH-3A-001)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious actuation due to failure of cable 2*CA 528. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0009B - 2B Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
602	Mechanical Penetration
603	Mechanical Penetration, Reactor Makeup Water Pumps, Refueling Water Pumps, Stm Gen Wet Layup Pumps
604	Laundry & Hot Shower Tank Pump, Floor Drain Tank Pump
605	Corridor
605A	Stairwell
606	Laundry & Hot Shower Tank, Floor Drain Tank
607	Waste Gas Comp Package
608	Waste Gas Comp Package
609	Waste Gas Hydrogen Recombiner
610	Spent Resin Sluice Pump
611	Spent Resin Storage Tank A
612	Spent Resin Storage Tank B
613	Mixing & Settling Tank, Mixing & Settling Tank Reagent Tank, Mixing & Settling Tank Metering Pump
614	Mixing & Settling Tank Sludge Tank, Mixing & Settling Tank Pump
615	Waste Gas Hydrogen Recombiner
615A	Gas Analyzer Rack
616	Gas Analyzer Rack
617	Recycle Monitor Tanks A and B
618	Recycle Evap Cond Return Unit, Recycle Evap Pkg
619	Shutdown Waste Gas Decay Tanks, Waste Gas Decay Tanks
620	Recycle Evap Feed Pumps, Recycle Reagent Tank
621	Stairway Lobby
621A	Stairway
622	Ground Water Drainage Sump Pumps, Compressed Gas Cylinders
623	Sample Panel
624	Stairway
625	Stm Gen Blowdown Tank & Pumps
626	Safety Injection Pump 1B
627	Centrifugal Charging Pump 1A
628	Safety Injection Pump 1A
629	Reciprocal Charging Pump
630	Centrifugal Charging Pump 1B
631	Sample Panel
632	Corridor
633	Safety Injection Pump 2B
634	Centrifugal Charging Pump 2A
635	Safety Injection Pump 2A

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
636	Reciprocal Charging Pump
637	Centrifugal Charging Pump 2B
638	Chemical Drain Tank and Pump, Sump Pumps
639	Corridor
640	Waste Drain Tank
641	Waste Evaporator Feed Tank
642	Waste Drain Tank Pumps
643	Waste Evap Feed Pumps
644	Waste Evap Package, Waste Evap Cond Return
645	Corridor
645A	Stairway
646	Mechanical Penetration, Reactor Makeup Water Pumps, Refueling Water Pump, Stm. Gen. Wet Lay Up Pumps
647	Mechanical Penetration
649	Corridor, NSW Pumps

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring available in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action 02. Auxiliary Building 10 CFR50 Appendix R III.G.2.c Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the unprotected steel supports penetrating the fire rated barriers separating redundant safe shutdown system components (pumps) as required by Section III.G.2.c of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- Low combustible loading in area.
- Fire detection is installed over the pumps.
- Automatic suppression is installed over the pumps.
- Manual suppression (portable extinguishers and hose stations) is available for fire brigade response.

The areas affected by the deviation are in the auxiliary building on elevations 716 and 733 feet. Fire areas affected include 2, 2A, 3, 3A, 4, and 14. The walls, floors, and ceilings of these fire areas are of reinforced concrete construction and provide 3-hour fire rated barriers. Mechanical and electrical penetrations in rated barriers are sealed with an approved 3-hour silicone foam seal or have been qualified by a fire test. HVAC ducts are provided with 1-1/2-hour UL fire rated dampers.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Licensing Action 12. Reactor Building 10 CFR50 Appendix R III.G.2.a Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the omission of standard designed fire tested penetration seals in the three hour fire rated reactor building walls as required by Section III.G.2.a of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- The penetrations and seals are constructed of noncombustible material.
- The annulus areas have automatic suppression.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The reactor building walls are constructed of 3-foot thick reinforced concrete with silicone foam in the expansions joints.
- Automatic fire detection is provided on both sides of penetrations.
- Limited combustibles in areas.
- The dedicated safe shutdown system is available for safe shutdown should a fire damage normal safe shutdown system components near the subject penetration seals.

This deviation addresses the existing reactor building penetrations for the process piping, spare sleeves, HVAC ducts, and personnel access. In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.4 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the redundant KC, NV, RN, and ND pumps. The calculation determined the fire barriers are considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Limited in-situ and transient combustibles • Area fixed automatic sprinkler systems • Administrative controls for hot work and combustible loading • Area fire detection • Fire brigade response • Penetration seal construction. Due to the conditions identified above and the presence of the SSF, a fire in these areas is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 05 Fire Protection Evaluation For Over Sized Pipe Penetration
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at ten (10) penetrations (716-16.1-12, 716-16.1-13, 2-716-108.1-6, 733-92.1-1, 733-92.1-2, 750-21.2-1, 750-35.1-1, 750-35.1-2, 750-35.1-3, and 750-178.1-10). These seal configurations do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. In each case, the pipe size and opening size exceeds the limitation of the associated typical detail design. Each of these penetrations is located in a NRC committed fire barrier. The calculation determined the penetration seals currently installed at penetrations identified are adequate for the hazard. In all cases the present seal configuration has been demonstrated as capable of providing a 3 hour F rating. Furthermore, applications in 1-1/2 hour rated barriers do not present realistic T rating concerns, due to the location of the seals and the fact that the 1-1/2 hour rated barriers are partial length walls (i.e., they do not provide complete separation of adjacent areas). Applications in 3 hour rated barriers do not result in T rating concerns due to the minimal increase in pipe size (12" actual vs. 10" qualified by test) and the fact that no exposed combustible materials are in contact with or adjacent to these penetrations. Therefore, a fire initiating in one area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, and postulated safe shutdown methods will not be adversely impacted for these plant areas.

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0013, Sect. 9.2.03 Fire Protection Code Deviations
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the discrepancy of the identified required pressure of 191.7-PSI and the available supply pressure of 111.7-PSI. The calculation determined the supply pressure is considered adequate for the hazard and this discrepancy to be acceptable since the calculation for this system, MCC-1223.49-00-0030, did not take into account the following: • The actual size of the bypass. • The fire barrier at col. 56. The actual size of the bypass is 2.5" as opposed to 2". This provides greater available pressure than that listed in the calculation. Due to the fire barrier, the actual flow requirement would be about half. The actual pressure is sufficient to meet the needs of the system in the areas of concern.

Engineering Evaluation ID	MCC-1435.03-00-0014, Att. 07 GL 86-10 Evaluation of Unrated fire barrier open grating locations at Auxiliary Building elevation 733' (FA 4 to FA 14)
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two open floor gratings in the Auxiliary Building (AB) barrier at elevation 733' separating Fire Areas (FAs) 4 and 14. The calculation determined the barrier to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • the combustible controls, • automatic detection, • presence of well distributed manual fire suppression capability in the vicinity of the rooms containing the open grating, • use of SSS for safe shutdown, • the floor-ceiling height providing sufficient room volume for hot gas layer dispersion, • the fire brigade response. The following open item was identified during this evaluation: 1. NSD-313 needs to be revised to identify rooms 602, 603, 646, 647, 730, and 788 as Exclusion Areas for transient combustibles during all modes.

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0014, Att. 09 GL 86-10 Evaluation of Unrated fire barrier stairway openings at Auxiliary Building elevation 716' (FA 1 to FA 4)
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two circular stairway floor openings in the Auxiliary Building (AB) barrier at elevation 716' separating Fire Areas (FAs) 1 and 4. The calculation determined the barrier to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • limited in situ combustibles (IEEE 383 cable), • the combustible controls, • automatic detection, • suppression on elevations 695' and 716' in areas of stairs, • local manual suppression equipment, • use of SSS for safe shutdown on both elevations, • the fire brigade response. The following open items were identified during this evaluation to support assumptions used for this evaluation: 1. NSD-313 needs to be revised to identify the 5 ft space around each open circular stairwell on elevations 695' and 716' as an Exclusion Area for transient combustibles during all modes.

Attachment C

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

Fire Area ID: 04 (Unit 1) - Aux Building Common El 716
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
(All)	Area Wide	None	None	R	Procedures/Recovery Actions: R
602	Mechanical Penetration	None	None	E	Combustible Control: E
603	Mechanical Penetration, Reactor Makeup Water Pumps, Refueling Water Pumps, Stm Gen Wet Layup Pumps	None	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D
604	Laundry & Hot Shower Tank Pump, Floor Drain Tank Pump	None	None	None	None
605	Corridor	None	D	None	Detection System, FA 04 Detection: D
605A	Stairwell	None	None	None	None
606	Laundry & Hot Shower Tank, Floor Drain Tank	None	None	None	None
607	Waste Gas Comp Package	None	None	None	None
608	Waste Gas Comp Package	None	None	None	None
609	Waste Gas Hydrogen Recombiner	None	None	None	None
610	Spent Resin Sluice Pump	None	None	None	None
611	Spent Resin Storage Tank A	None	None	None	None
612	Spent Resin Storage Tank B	None	None	None	None
613	Mixing & Settling Tank, Mixing & Settling Tank Reagent Tank, Mixing & Settling Tank Metering Pump	None	None	None	None
614	Mixing & Settling Tank Sludge Tank, Mixing & Settling Tank Pump	None	None	None	None
615	Waste Gas Hydrogen Recombiner	None	None	None	None
615A	Gas Analyzer Rack	None	None	None	None
616	Gas Analyzer Rack	None	None	None	None
617	Recycle Monitor Tanks A and B	None	None	None	None
618	Recycle Evap Cond Return Unit, Recycle Evap Pkg	None	None	None	None
619	Shutdown Waste Gas Decay Tanks, Waste Gas Decay Tanks	None	None	None	None
620	Recycle Evap Feed Pumps, Recycle Reagent Tank	None	None	None	None
621	Stairway Lobby	None	None	None	None
621A	Stairway	None	None	None	None

Attachment C

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

Fire Area ID: 04 (Unit 1) - Aux Building Common El 716
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
622	Ground Water Drainage Sump Pumps, Compressed Gas Cylinders	None	None	None	None
623	Sample Panel	None	D	None	Detection System, FA 04 Detection: D
624	Stairway	None	None	None	None
625	Stm Gen Blowdown Tank & Pumps	None	None	None	None
626	Safety Injection Pump 1B	None	D	None	Detection System, FA 04 Detection: D
627	Centrifugal Charging Pump 1A	E	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D Water Suppression, FA 04 Suppression: E
628	Safety Injection Pump 1A	None	D	None	Detection System, FA 04 Detection: D
629	Reciprocal Charging Pump	None	D	None	Detection System, FA 04 Detection: D
630	Centrifugal Charging Pump 1B	E	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D Water Suppression, FA 04 Suppression: E
631	Sample Panel	None	D	None	Detection System, FA 04 Detection: D
632	Corridor	None	E	None	Detection System, FA 04 Detection: E
633	Safety Injection Pump 2B	None	D	None	Detection System, FA 04 Detection: D
634	Centrifugal Charging Pump 2A	E	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D Water Suppression, FA 04 Suppression: E
635	Safety Injection Pump 2A	None	D	None	Detection System, FA 04 Detection: D
636	Reciprocal Charging Pump	None	D	None	Detection System, FA 04 Detection: D
637	Centrifugal Charging Pump 2B	E	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D Water Suppression, FA 04 Suppression: E
638	Chemical Drain Tank and Pump, Sump Pumps	None	None	None	None
639	Corridor	None	None	None	None
640	Waste Drain Tank	None	None	None	None
641	Waste Evaporator Feed Tank	None	None	None	None
642	Waste Drain Tank Pumps	None	None	None	None
643	Waste Evap Feed Pumps	None	None	None	None
644	Waste Evap Package, Waste Evap Cond Return	None	None	None	None
645	Corridor	None	D	None	Detection System, FA 04 Detection: D
645A	Stairway	None	None	None	None

Attachment C

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

Fire Area ID: 04 (Unit 1) - Aux Building Common El 716
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
646	Mechanical Penetration, Reactor Makeup Water Pumps, Refueling Water Pump, Stm. Gen. Wet Lay Up Pumps	None	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D
647	Mechanical Penetration	None	None	E	Combustible Control: E
649	Corridor, NSW Pumps	E, D	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D Water Suppression, FA 04 Suppression: E D

Title Fire Risk Evaluation for Fire Area 04 (Unit 1)

Risk Summary The delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr and 1E-08/rx-yr for acceptable risk . All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [Common] 1.00E-09

Δ LERF Units: [Common] 1.00E-10

DID Maintained A review of defense in depth and risk evaluation results shows that risk screening criteria are met and that the balance of defense in depth is maintained. The risk screening acceptance criteria are met with margin to account for analytical methods associated with fire scenarios. Administrative controls would not provide appreciable benefit to the overall fire area risk. However, early detection of a fire from the installed detection system could allow fire brigade response sooner; therefore, fire detection is being required for DID. Additionally, since a severe fire associated with the Nuclear Service Water Pumps is a significant risk contributor, the suppression system installed in the area of the 1A and 2A RN pumps is being required for DID. Finally, consistent with the risk evaluation, recovery actions to manually throttle auxiliary feedwater flow are required. As a final measure to ensure nuclear performance criteria are met, a DID modification is required. Given the actions required by the risk analysis and the DID assessment, the ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-003 (O-4-015)
VFDR	This component, which is normally open, required open for HSB, is affected by being located in the area. Cable failures may cause IN 92-18 concerns before and after the power is swapped to the SSF. Failure of cable 1*RN 597 may cause an IN 92-18 concern (open direction) before and after the swap. Failure of cable 1*RN 827 may cause an IN 92-18 concern (both directions) before the swap and (open direction) after the swap. ORN VA0148AC is required to be open to provide RC Water to the Unit 1 Turbine Driven AFW (Auxiliary Feedwater) Pump. This concern is not considered time critical due to volume of water in the CAST. There is approximately 18 hours per references in SLC 16.9.7. The RC water supply and this valve would need to be aligned within this 18 hours. This failure condition may 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.
Component(s)	0RN VA0148AC - 1A & 2A RN DISCH TO RC X-OVER ISOL
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-004 (OE-4-033)
VFDR	This component, which is normally open, required open for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cables 1*RN 597 and 1*RN 827. Valve can fail as follows: If actuator stalls in either the OPEN or CLOSE direction, the gearbox will be damaged. Only means of re-positioning valve would be to replace gearbox, or use some type of wrench to place valve in desired position after gearbox and actuator have been removed (Reference MCC 1205.19-00-0084). A repair of the valve and action to open the valve is required. Failure of cable 1*RN 597 may cause an IN 92-18 concern (open direction) before and after the swap. Failure of cable 1*RN 827 may cause an IN 92-18 concern (both directions) before the swap and (open direction) after the swap. This concern is not considered time critical due to volume of water in the CAST. There is approximately 18 hours per references in SLC 16.9.7. The RC water supply and this valve would need to be aligned within this 18 hours. This failure condition may 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.
Component(s)	0RN VA0148AC - 1A & 2A RN DISCH TO RC X-OVER ISOL
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-005 (OP-4-028)
VFDR	This component, which is normally cycled, required cycled for HSB, is affected by the following. When 0WZ PU0001 is transferred to the SSF, cable 1*WZ 542 can spuriously cause the pump to start or the cable could prevent the pump from cycling as desired. There are also other cable failures that exist that may prevent the pump from cycling as desired prior to the transfer to the SSF. Either 0WZ PU0001 or 0WZ PU0003 pump is required for SSF function. Both pumps have spurious operation / loss of control concerns in this fire area. This failure condition may challenge 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.
Component(s)	0WZ PU0001 - A Groundwater Sump Pump A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-006 (OP-4-031)
VFDR	This component, which is normally cycled, required cycled for HSB, is affected by the following. When 0WZ PU0003 is transferred to the SSF, cable 1*WZ 544 can spuriously cause the pump to start or the cable could prevent the pump from cycling as desired. There are also other cable failures that exist that may prevent the pump from cycling as desired prior to the transfer to the SSF. Either 0WZ PU0001 or 0WZ PU0003 pump is required for SSF function. Both pumps have spurious operation / loss of control concerns in this fire area. This failure condition may challenge 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.
Component(s)	0WZ PU0003 - B Groundwater Sump Pump A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-007 (PH-4-035)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-008 (PH-4-035)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-010 (O-4-024)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 1NI-185A and 1NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and 92-18 concerns. Valves 1FW-27A, 1ND-19A and 1ND-4B have cable failures that cause spurious operation and 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-011 (O-4-026)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 1NS-1B and 1NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 1NS-1B and 1NS-18A may be required. Although valves 1NS-3B and 1NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-013 (PH-4-015)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0083 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0083 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0078 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0078 or 1SM VA0083 is required closed. Valve 1SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0083 - A Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-014 (PH-4-017)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0089 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0089 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0084 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0084 or 1SM VA0089 is required closed. Valve 1SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0089 - B Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-015 (PH-4-018)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0095 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0095 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0090 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0090 or 1SM VA0095 is required closed. Valve 1SM VA0095 s assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0095 - C Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-016 (PH-4-016)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0101 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0101 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0096 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0096 or 1SM VA0101 is required closed. Valve 1SM VA0101 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0101 - D Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-019 (PH-4-022)
VFDR	This component, which is normally open, required cycled for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. Valve can spuriously operate if re-energized due to failure of cable 1 CA 536. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-027 (OP-4-003)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXG is not diesel backed. Either 1CS VA0018 or 1CA VA0004 is required closed to preclude air entrapment concerns. 1CA-4 could spuriously open due to failure of cable 1 CA 536. 1CS-18 could also spuriously open due to failure of cable 1 CA 536. This failure condition may 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.
Component(s)	1CA VA0004 - Unit 1 Auxiliary Feedwater Pumps Suction from Upper Surge Tank Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-035 (OP-4-001)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXC is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 1CA VA0006 could spuriously open due to failure of cable 1 CA 536. This failure condition may 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.
Component(s)	1CA VA0006 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Condensate Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-040 (PH-4-005)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation due to failure of cable 1*CA 519 until 1EMXA4 is swapped to its alternate power source. The credited TDCAP, which starts on loss of offsite power, will be damaged if the suction valve 1CA7AC goes closed. This component automatically goes to its required position (open) when 1EMXA4 is swapped. Circuit design removes possible cable failures upon timely transfer to the SSF. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0007AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Modification(s) Required to Satisfy DID: 1CA-VA0007AC modification will resolve spurious operation.

VFDR ID	VFDR-04-052 (PH-4-067)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 1D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0036AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1D S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-04-057 (PH-4-067)
VFDR	This component, which is normally open, required throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 1D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0038B - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1D S/G Isolation valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-072 (OP-4-047)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by multiple cables causing spurious operations. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 1CA VA0050B is required to control level. However, 1CA VA0050B is subject to loss of offsite power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	1CA VA0048AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1C S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-04-073 (PH-4-068)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1C to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0048AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1C S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-04-079 (PH-4-068)
VFDR	This component, which is normally open, required throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1C to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0050B - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1C S/G Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-084 (OP-4-047)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by multiple cables causing spurious operations. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 1CA VA0054AC is required to control level. However, 1CA VA0054AC is subject to loss of offsite power and spurious operation before transfer via cable 1*CA 519. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	1CA VA0052AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G control valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-04-085 (PH-4-069)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 1*CA 519. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0052AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G control valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-04-086 (OP-4-045)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation of CA MOV due to failure of cable 1*CA 519 prior to transfer to the SSF. This failure condition may 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.
Component(s)	1CA VA0054AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G isolation valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-087 (PH-4-069)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 1*CA 519. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0054AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G isolation valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-04-088 (OP-4-047)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by multiple cables causing spurious operations. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 1CA VA0066AC is required to control level. However, 1CA VA0066AC is subject to loss of offsite power and spurious operation before transfer via cable 1*CA 519. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	1CA VA0064AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G control valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-04-089 (PH-4-070)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 1*CA 519. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0064AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G control valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-090 (OP-4-045)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation of CA MOV due to failure of cable 1*CA 519 prior to transfer to the SSF. This failure condition may 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.
Component(s)	1CA VA0066AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G isolation valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-04-091 (PH-4-070)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 1*CA 519. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0066AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G isolation valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-04-092 (O-4-002)
VFDR	This component, which is normally closed, required open for HSB, is affected by being in the fire area. Valves 1CA-161C and 1CA-162C are required to be opened to support SSF operation. Procedure AP/1/A/5500/24 has instructions to energize, open valves, then de-energize the valves at the SDSP. However, both of the valves are located in Fire Area 4 and there are multiple cable failures that may cause a loss of power, control, and indication if energized. 1CA-161C and 1CA-162C are normally closed and de-energized. Therefore, they must be manually opened prior to inventory depletion of the CA Storage Tank. The valves are available for manual operation after the fire is extinguished. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	1CA VA0161C - Unit 1 Auxiliary Feedwater Pumps Suction Header Nuclear Service Water Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-093 (O-4-002)
VFDR	This component, which is normally closed, required open for HSB, is affected by being in the fire area. Valves 1CA-161C and 1CA-162C are required to be opened to support SSF operation. Procedure AP/1/A/5500/24 has instructions to energize, open valves, then de-energize the valves at the SDSP. However, both of the valves are located in Fire Area 4 and there are multiple cable failures that may cause a loss of power, control, and indication if energized. 1CA-161C and 1CA-162C are normally closed and de-energized. Therefore, they must be manually opened prior to inventory depletion of the CA Storage Tank. The valves are available for manual operation after the fire is extinguished. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	1CA VA0162C - Unit 1 Auxiliary Feedwater Pumps Suction Header Nuclear Service Water Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-094 (OP-4-002)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXB is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 1CM VA0265 could spuriously open due to failure of cable 1 CA536. This failure condition may 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.
Component(s)	1CM VA0265 - Unit 1 Hotwell Auxiliary Feedwater Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-095 (OP-4-003)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Valve could spuriously open due to cable failure. Power supply 1EPDMXMXG is not diesel backed. Either 1CS VA0018 or 1CA VA0004 is required closed to preclude air entrapment concerns. 1CA-4 could spuriously open due to failure of cable 1 CA 536. 1CS-18 could also spuriously open due to failure of cable 1 CA 536. This failure condition may challenge the 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.
Component(s)	1CS VA0018 - Unit 1 Auxiliary Feedwater Pumps Suction from Upper Surge Tank Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-096 (O-4-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 1NI-185A and 1NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1FW-27A, 1ND-19A and 1ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-097 (OE-4-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*FW 502. Valve 1FW VA0027A is required closed to mitigate FWST drain down to the containment sump (MSO #14). The valve is required closed for CSD to allow alignment of the ND system to NC loop 3. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-098 (PH-4-013)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. 1ILE-PZRHTRA can also spuriously operate due to failure of cables 1*ILE 663 and 1*ILE 670. The trip of 1ILE-PZRHTRA can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC Non -Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRA - Backup Pressurizer Heater Group 1A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-099 (PH-4-013)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRB can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-100 (PH-4-013)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRC can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRC - Pressurizer Heater Group 1C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-101 (PH-4-013)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRD can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Safety/Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRD - Pressurizer Heater Group 1D
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-102 (PH-4-007)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps 1NV PU0015 and 1NV PU0016 are located in this area along with valves 1NV-141A, 142B,150B, 151A, 221A and 222B. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0001 - 1A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-103 (PH-4-007)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps 1NV PU0015 and 1NV PU0016 are located in this area along with valves 1NV-141A, 142B,150B, 151A, 221A and 222B. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0002 - 1B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-104 (PH-4-007)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps 1NV PU0015 and 1NV PU0016 are located in this area along with valves 1NV-141A, 142B,150B, 151A, 221A and 222B. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0003 - 1C Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-105 (PH-4-007)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps 1NV PU0015 and 1NV PU0016 are located in this area along with valves 1NV-141A, 142B,150B, 151A, 221A and 222B. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0004 - 1D Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-106 (O-4-022)
VFDR	This component, which is normally open, required closed for HSB, is affected by a spurious concern for the PORV due to the failure of cable 1*NC 908 before the swap to the SSF. Although the PORV Block Valves are unaffected by cable failures for a fire in this area, power may not be available to close the PORV block valves assuming offsite power is lost. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-107 (O-4-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 1NI-185A and 1NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1FW-27A, 1ND-19A and 1ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0004B - 1B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-108 (OE-4-042)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*ND 504. Valve 1ND VA0004B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1ND VA0019A or 1ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1ND VA0004B - 1B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-109 (O-4-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 1NI-185A and 1NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1FW-27A, 1ND-19A and 1ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0019A - 1A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-110 (OE-4-028)
VFDR	This component, which is normally open, required closed for HSB, is affected by he following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*ND 501. Valve 1ND VA0019A is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1ND VA0019A or 1ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1ND VA0019A - 1A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-111 (O-4-024)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump Valves 1NI-185A and 1NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1FW-27A, 1ND-19A and 1ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-112 (O-4-026)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 1NS-1B and 1NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 1NS-1B and 1NS-18A may be required. Although valves 1NS-3B and 1NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-113 (OE-4-040)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cables 1*NI 569, 1*NI 627, and 1*NI 631. Valve 1NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve not evaluated in calc MCC 1205.19-00-0084. This failure condition may challenge the 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.
Component(s)	1NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-114 (O-4-024)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 1NI-185A and 1NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1FW-27A, 1ND-19A and 1ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-115 (O-4-026)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 1NS-1B and 1NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 1NS-1B and 1NS-18A may be required. Although valves 1NS-3B and 1NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-116 (OE-4-027)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cables 1*NI 572, 1*NI 667, and 1*NI 671. Valve 1NI VA0185A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-117 (O-4-026)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 1NS-1B and 1NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 1NS-1B and 1NS-18A may be required. Although valves 1NS-3B and 1NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0001B - 1B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-118 (OE-4-041)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 502. Valve 1NS VA0001B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1NS VA0001B - 1B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-119 (J226)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cable 1*NC 908. The respective NC block valve is affected by assumed loss of off-site power and safety diesels not credited for this area. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0034A - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-120 (O-4-026)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A have cable failures that cause spurious operation and 92-18 concerns. Valves 1NI-184B and 1NI-185A have cables that cause spurious operation and 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 1NS-1B and 1NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 1NS-1B and 1NS-18A may be required. Although valves 1NS-3B and 1NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0003B - 1B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-122 (OE-4-006)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 503. Valve 1NS VA0003B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may challenge the 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.
Component(s)	1NS VA0003B - 1B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-123 (O-4-026)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 1NS-1B and 1NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 1NS-1B and 1NS-18A may be required. Although valves 1NS-3B and 1NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0018A - 1A Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-124 (OE-4-037)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 511. Valve 1NS VA0018A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged in the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1NS VA0018A - 1A Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-125 (O-4-026)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, and 1NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 1NI-184B and 1NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 1NS-1B and 1NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 1NS-1B and 1NS-18A may be required. Although valves 1NS-3B and 1NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0020A - 1A Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-126 (OE-4-043)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 512. Valve 1NS VA0020A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may challenge the 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.
Component(s)	1NS VA0020A - 1A Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-133 (OP-4-049)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*FW 502. Valve 1FW VA0027A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 1NS VA0043A and 1NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to the spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-134 (OP-4-049)
VFDR	This component, which is normally off, required off for HSB, is affected by possible start due to interlock failure. Pump 1ND PU0001 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 1NS VA0043A and 1NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND PU0001 - 1A Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-135 (OP-4-049)
VFDR	This component, which is normally off, required off for HSB, is affected by possible start due to interlock failure. Pump 1ND PU0002 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 1NS VA0043A and 1NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND PU0002 - 1B Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-136 (OP-4-049)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*ND 504. Valve 1ND VA0004B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 1NS VA0043A and 1NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0004B - 1B Residual Heat Removal Suction from FWST or Reactor Coolant Containment Isolation Outside Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-137 (OP-4-049)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*ND 501. Numerous other cables can also cause spurious operation. Valve 1ND VA0019A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 1NS VA0043A and 1NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0019A - 1A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action	
VFDR ID	VFDR-04-138 (OP-4-049)	
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 1*NI 569. Valve 1NS VA0038B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 1NS VA0043A and 1NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.	
Component(s)	1NS VA0038B - 1B Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)	
VFDR ID	VFDR-04-139 (OP-4-049)	
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 1*NI 572, 1*NI 667 or 1*NI 735. Valve 1NS VA0043A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 1NS VA0043A and 1NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.	
Component(s)	1NS VA0043A - 1A Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)	

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

Fire Area ID:	04 (Unit 1) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-147 (OP-4-049)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 1NS VA0043A and 1NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to the spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
602	Mechanical Penetration
603	Mechanical Penetration, Reactor Makeup Water Pumps, Refueling Water Pumps, Stm Gen Wet Layup Pumps
604	Laundry & Hot Shower Tank Pump, Floor Drain Tank Pump
605	Corridor
605A	Stairwell
606	Laundry & Hot Shower Tank Floor Drain Tank
607	Waste Gas Comp Package
608	Waste Gas Comp Package
609	Waste Gas Hydrogen Recombiner
610	Spent Resin Sluice Pump
611	Spent Resin Storage Tank A
612	Spent Resin Storage Tank B
613	Mixing & Settling Tank, Mixing & Settling Tank Reagent Tank, Mixing & Settling Tank Metering Pump
614	Mixing & Settling Tank Sludge Tank, Mixing & Settling Tank Pump
615	Waste Gas Hydrogen Recombiner
615A	Gas Analyzer Rack
616	Gas Analyzer Rack
617	Recycle Monitor Tanks A and B
618	Recycle Evap Cond Return Unit, Recycle Evap Pkg
619	Shutdown Waste Gas Decay Tanks, Waste Gas Decay Tanks
620	Recycle Evap Feed Pumps, Recycle Reagent Tank
621	Stairway Lobby
621A	Stairway
622	Ground Water Drainage Sump Pumps, Compressed Gas Cylinders
623	Sample Panel
624	Stairway
625	Stm Gen Blowdown Tank & Pumps
626	Safety Injection Pump 1B
627	Centrifugal Charging Pump 1A
628	Safety Injection Pump 1A
629	Reciprocal Charging Pump
630	Centrifugal Charging Pump 1B
631	Sample Panel
632	Corridor
633	Safety Injection Pump 2B
634	Centrifugal Charging Pump 2A
635	Safety Injection Pump 2A

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
636	Reciprocal Charging Pump
637	Centrifugal Charging Pump 2B
638	Chemical Drain Tank and Pump, Sump Pumps
639	Corridor
640	Waste Drain Tank
641	Waste Evaporator Feed Tank
642	Waste Drain Tank Pumps
643	Waste Evap Feed Pumps
644	Waste Evap Package, Waste Evap Cond Return
645	Corridor
645A	Stairway
646	Mechanical Penetration, Reactor Makeup Water Pumps, Refueling Water Pump, Stm. Gen. Wet Lay Up Pumps
647	Mechanical Penetration
649	Corridor, NSW Pumps

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring available in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action

02. Auxiliary Building 10 CFR50 Appendix R III.G.2.c Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the unprotected steel supports penetrating the fire rated barriers separating redundant safe shutdown system components (pumps) as required by Section III.G.2.c of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- Low combustible loading in area.
- Fire detection is installed over the pumps.
- Automatic suppression is installed over the pumps.
- Manual suppression (portable extinguishers and hose stations) is available for fire brigade response.

The areas affected by the deviation are in the auxiliary building on elevations 716 and 733 feet. Fire areas affected include 2, 2A, 3, 3A, 4, and 14. The walls, floors, and ceilings of these fire areas are of reinforced concrete construction and provide 3-hour fire rated barriers. Mechanical and electrical penetrations in rated barriers are sealed with an approved 3-hour silicone foam seal or have been qualified by a fire test. HVAC ducts are provided with 1-1/2-hour UL fire rated dampers.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Licensing Action

12. Reactor Building 10 CFR50 Appendix R III.G.2.a Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the omission of standard designed fire tested penetration seals in the three hour fire rated reactor building walls as required by Section III.G.2.a of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- The penetrations and seals are constructed of noncombustible material.
- The annulus areas have automatic suppression.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The reactor building walls are constructed of 3-foot thick reinforced concrete with silicone foam in the expansions joints.
- Automatic fire detection is provided on both sides of penetrations.
- Limited combustibles in areas.
- The dedicated safe shutdown system is available for safe shutdown should a fire damage normal safe shutdown system components near the subject penetration seals.

This deviation addresses the existing reactor building penetrations for the process piping, spare sleeves, HVAC ducts, and personnel access. In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.4 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the redundant KC, NV, RN, and ND pumps. The calculation determined the fire barriers are considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Limited in-situ and transient combustibles • Area fixed automatic sprinkler systems • Administrative controls for hot work and combustible loading • Area fire detection • Fire brigade response • Penetration seal construction. Due to the conditions identified above and the presence of the SSF, a fire in these areas is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 05 Fire Protection Evaluation For Over Sized Pipe Penetration
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at ten (10) penetrations (716-16.1-12, 716-16.1-13, 2-716-108.1-6, 733-92.1-1, 733-92.1-2, 750-21.2-1, 750-35.1-1, 750-35.1-2, 750-35.1-3, and 750-178.1-10). These seal configurations do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. In each case, the pipe size and opening size exceeds the limitation of the associated typical detail design. Each of these penetrations is located in a NRC committed fire barrier. The calculation determined the penetration seals currently installed at penetrations identified are adequate for the hazard. In all cases the present seal configuration has been demonstrated as capable of providing a 3 hour F rating. Furthermore, applications in 1-1/2 hour rated barriers do not present realistic T rating concerns, due to the location of the seals and the fact that the 1-1/2 hour rated barriers are partial length walls (i.e., they do not provide complete separation of adjacent areas). Applications in 3 hour rated barriers do not result in T rating concerns due to the minimal increase in pipe size (12" actual vs. 10" qualified by test) and the fact that no exposed combustible materials are in contact with or adjacent to these penetrations. Therefore, a fire initiating in one area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, and postulated safe shutdown methods will not be adversely impacted for these plant areas.

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0013, Sect. 9.2.03 Fire Protection Code Deviations
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the discrepancy of the identified required pressure of 191.7-PSI and the available supply pressure of 111.7-PSI. The calculation determined the supply pressure is considered adequate for the hazard and this discrepancy to be acceptable since the calculation for this system, MCC-1223.49-00-0030, did not take into account the following: • The actual size of the bypass. • The fire barrier at col. 56. The actual size of the bypass is 2.5" as opposed to 2". This provides greater available pressure than that listed in the calculation. Due to the fire barrier, the actual flow requirement would be about half. The actual pressure is sufficient to meet the needs of the system in the areas of concern.

Engineering Evaluation ID	MCC-1435.03-00-0014, Att. 07 GL 86-10 Evaluation of Unrated fire barrier open grating locations at Auxiliary Building elevation 733' (FA 4 to FA 14)
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two open floor gratings in the Auxiliary Building (AB) barrier at elevation 733' separating Fire Areas (FAs) 4 and 14. The calculation determined the barrier to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • the combustible controls, • automatic detection, • presence of well distributed manual fire suppression capability in the vicinity of the rooms containing the open grating, • use of SSS for safe shutdown, • the floor-ceiling height providing sufficient room volume for hot gas layer dispersion, • the fire brigade response. The following open item was identified during this evaluation: 1. NSD-313 needs to be revised to identify rooms 602, 603, 646, 647, 730, and 788 as Exclusion Areas for transient combustibles during all modes.

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0014, Att. 09 GL 86-10 Evaluation of Unrated fire barrier stairway openings at Auxiliary Building elevation 716' (FA 1 to FA 4)
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two circular stairway floor openings in the Auxiliary Building (AB) barrier at elevation 716' separating Fire Areas (FAs) 1 and 4. The calculation determined the barrier to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • limited in situ combustibles (IEEE 383 cable), • the combustible controls, • automatic detection, • suppression on elevations 695' and 716' in areas of stairs, • local manual suppression equipment, • use of SSS for safe shutdown on both elevations, • the fire brigade response. The following open items were identified during this evaluation to support assumptions used for this evaluation: 1. NSD-313 needs to be revised to identify the 5 ft space around each open circular stairwell on elevations 695' and 716' as an Exclusion Area for transient combustibles during all modes.

Attachment C

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

Fire Area ID: 04 (Unit 2) - Aux Building Common El 716
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
(All)	Area Wide	None	None	R	Procedures/Recovery Actions: R
602	Mechanical Penetration	None	None	E	Combustible Control: E
603	Mechanical Penetration, Reactor Makeup Water Pumps, Refueling Water Pumps, Stm Gen Wet Layup Pumps	None	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D
604	Laundry & Hot Shower Tank Pump, Floor Drain Tank Pump	None	None	None	None
605	Corridor	None	D	None	Detection System, FA 04 Detection: D
605A	Stairwell	None	None	None	None
606	Laundry & Hot Shower Tank Floor Drain Tank	None	None	None	None
607	Waste Gas Comp Package	None	None	None	None
608	Waste Gas Comp Package	None	None	None	None
609	Waste Gas Hydrogen Recombiner	None	None	None	None
610	Spent Resin Sluice Pump	None	None	None	None
611	Spent Resin Storage Tank A	None	None	None	None
612	Spent Resin Storage Tank B	None	None	None	None
613	Mixing & Settling Tank, Mixing & Settling Tank Reagent Tank, Mixing & Settling Tank Metering Pump	None	None	None	None
614	Mixing & Settling Tank Sludge Tank, Mixing & Settling Tank Pump	None	None	None	None
615	Waste Gas Hydrogen Recombiner	None	None	None	None
615A	Gas Analyzer Rack	None	None	None	None
616	Gas Analyzer Rack	None	None	None	None
617	Recycle Monitor Tanks A and B	None	None	None	None
618	Recycle Evap Cond Return Unit, Recycle Evap Pkg	None	None	None	None
619	Shutdown Waste Gas Decay Tanks, Waste Gas Decay Tanks	None	None	None	None
620	Recycle Evap Feed Pumps, Recycle Reagent Tank	None	None	None	None
621	Stairway Lobby	None	None	None	None
621A	Stairway	None	None	None	None

Attachment C

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

Fire Area ID: 04 (Unit 2) - Aux Building Common El 716
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
622	Ground Water Drainage Sump Pumps, Compressed Gas Cylinders	None	None	None	None
623	Sample Panel	None	D	None	Detection System, FA 04 Detection: D
624	Stairway	None	None	None	None
625	Stm Gen Blowdown Tank & Pumps	None	None	None	None
626	Safety Injection Pump 1B	None	D	None	Detection System, FA 04 Detection: D
627	Centrifugal Charging Pump 1A	E	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D Water Suppression, FA 04 Suppression: E
628	Safety Injection Pump 1A	None	D	None	Detection System, FA 04 Detection: D
629	Reciprocal Charging Pump	None	D	None	Detection System, FA 04 Detection: D
630	Centrifugal Charging Pump 1B	E	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D Water Suppression, FA 04 Suppression: E
631	Sample Panel	None	D	None	Detection System, FA 04 Detection: D
632	Corridor	None	E	None	Detection System, FA 04 Detection: E
633	Safety Injection Pump 2B	None	D	None	Detection System, FA 04 Detection: D
634	Centrifugal Charging Pump 2A	E	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D Water Suppression, FA 04 Suppression: E
635	Safety Injection Pump 2A	None	D	None	Detection System, FA 04 Detection: D
636	Reciprocal Charging Pump	None	D	None	Detection System, FA 04 Detection: D
637	Centrifugal Charging Pump 2B	E	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D Water Suppression, FA 04 Suppression: E
638	Chemical Drain Tank and Pump, Sump Pumps	None	None	None	None
639	Corridor	None	None	None	None
640	Waste Drain Tank	None	None	None	None
641	Waste Evaporator Feed Tank	None	None	None	None
642	Waste Drain Tank Pumps	None	None	None	None
643	Waste Evap Feed Pumps	None	None	None	None
644	Waste Evap Package, Waste Evap Cond Return	None	None	None	None
645	Corridor	None	D	None	Detection System, FA 04 Detection: D
645A	Stairway	None	None	None	None

Attachment C

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

Fire Area ID: 04 (Unit 2) - Aux Building Common El 716
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
646	Mechanical Penetration, Reactor Makeup Water Pumps, Refueling Water Pump, Stm. Gen. Wet Lay Up Pumps	None	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D
647	Mechanical Penetration	None	None	E	Combustible Control: E
649	Corridor, NSW Pumps	E, D	E, D	E	Combustible Control: E Detection System, FA 04 Detection: E D Water Suppression, FA 04 Suppression: E D

Title Fire Risk Evaluation for Fire Area 04 (Unit 2)

Risk Summary The delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [Common] 0.00E+00

Δ LERF Units: [Common] 0.00E+00

DID Maintained A review of defense in depth and risk evaluation results shows that risk screening criteria are met and that the balance of defense in depth is maintained. The risk screening acceptance criteria are met with margin to account for analytical methods associated with fire scenarios. Administrative controls would not provide appreciable benefit to the overall fire area risk. However, to provide additional margin, recovery actions to manually throttle auxiliary feedwater for risk are being required. In addition, early detection of a fire from the installed detection system would allow fire brigade response sooner; therefore, installed fire detection systems are being required for DID. To provide additional analytical margin because a severe fire associated with the Nuclear Service Water Pumps is a significant risk contributor, the suppression system installed in the area of the 1A and 2A RN pumps is being required for DID. In the event of no intervention by the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the analyzed scenarios. As a final measure to ensure nuclear performance criteria are met, a DID modification is required. Given the systems and features required by the risk analysis and the DID assessment, the ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-001 (OE-4-036)
VFDR	This component, which is normally open, required open for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 1*RN 604. Valve can fail as follows: If actuator stalls in either the OPEN or CLOSE direction, the gearbox will be damaged. Only means of re-positioning valve would be to replace gearbox, or use some type of wrench to place valve in desired position after gearbox and actuator have been removed (Reference MCC 1205.19-00-0084). An action to open the valve may be required. Cable 1*RN 604 contains hot conductors from other circuits, therefore a hot short may bypass the limit switch in 0RN-4AC and may force the valve open and damage the valve (before and after the swap to the SSF). A hot short in 1*RN 604 may also spuriously close 0RN-4AC before the swap to the SSF. However, this cable alone will not cause an IN 92-18 concern in the closed direction. This concern is not considered time critical due to volume of water in the CAST. There is approximately 18 hours per references in SLC 16.9.7. The RC water supply and this valve would need to be aligned within this 18 hours. This failure condition may 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.
Component(s)	0RN VA0004AC - 1B & 2B RN SUPPLY FROM RC ISOL
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-002 (OP-4-019)
VFDR	This component, which is normally open, required open for HSB, is affected by the failure of cable 1*RN 604. Cable 1*RN 604 contains hot conductors from other circuits, therefore a hot short may bypass the limit switch in 0RN-4AC and may force the valve open and damage the valve (before and after the swap to the SSF). A hot short in 1*RN 604 may also spuriously close 0RN-4AC before the swap to the SSF. However, this cable alone will not cause an IN 92-18 concern in the closed direction. 0RN VA0004AC is required to be open to provide RC Water to the Unit 2 Turbine Driven AFW Pump. This concern is not considered time critical due to volume of water in the CAST. There is approximately 18 hours per references in SLC 16.9.7. The RC water supply and this valve would need to be aligned within this 18 hours. This failure condition may 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.
Component(s)	0RN VA0004AC - 1B & 2B RN SUPPLY FROM RC ISOL
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-005 (OP-4-028)
VFDR	This component, which is normally cycled, required cycled for HSB, is affected by the following. When 0WZ PU0001 is transferred to the SSF, cable 1*WZ 542 can spuriously cause the pump to start or the cable could prevent the pump from cycling as desired. There are also other cable failures that exist that may prevent the pump from cycling as desired prior to the transfer to the SSF. Either 0WZ PU0001 or 0WZ PU0003 pump is required for SSF function. Both pumps have spurious operation / loss of control concerns in this fire area. This failure condition may challenge 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.
Component(s)	0WZ PU0001 - A Groundwater Sump Pump A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-006 (OP-4-031)
VFDR	This component, which is normally cycled, required cycled for HSB, is affected by the following. When 0WZ PU0003 is transferred to the SSF, cable 1*WZ 544 can spuriously cause the pump to start or the cable could prevent the pump from cycling as desired. There are also other cable failures that exist that may prevent the pump from cycling as desired prior to the transfer to the SSF. Either 0WZ PU0001 or 0WZ PU0003 pump is required for SSF function. Both pumps have spurious operation / loss of control concerns in this fire area. This failure condition may challenge 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.
Component(s)	0WZ PU0003 - B Groundwater Sump Pump A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-017 (PH-4-051)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-018 (PH-4-051)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-022 (PH-4-047)
VFDR	This component, which is normally open, required cycled for HSB, is affected by an assumed loss of offsite power. Power supply 2EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-023 (OE-4-009)
VFDR	This component, which is normally open, required open for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 2*CA 557. Valve can fail as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may 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.
Component(s)	2CA VA0007A - Unit 2 Turbine Driven Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-024 (PH-4-066)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation from failure of cables 2*CA 557, 2*CA 517 or 2*CA 519. Cable 2*CA 557 can cause an IN 92-18 concern. The credited TDCAP, which starts on loss of offsite power, will be damaged if the suction valve 2CA-7A goes closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0007A - Unit 2 Turbine Driven Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Modification(s) Required to Satisfy DID: 2CA-VA0007A modification will resolve spurious operation.

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-025 (PH-4-071)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 2D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0036AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-04-026 (PH-4-071)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 2D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0038B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-04-028 (OP-4-048)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by multiple cables causing spurious operations. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 2CA VA0050B is required to control level. However, 2CA VA0050B is subject to loss of offsite power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	2CA VA0048AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-029 (PH-4-072)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 2C to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0048AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-04-030 (PH-4-072)
VFDR	This component, which is normally open, required throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 2C to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0050B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-04-031 (OP-4-048)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by multiple cables causing spurious operations. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 2CA VA0054AC is required to control level. However, 2CA VA0054AC is subject to loss of offsite power and spurious operation before transfer via cable 2*CA 519. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	2CA VA0052AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-032 (PH-4-073)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 2*CA 519. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0052AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-04-033 (OP-4-045)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation of CA MOV due to failure of cable 2*CA 519 prior to transfer to the SSF. This failure condition may 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.
Component(s)	2CA VA0054AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-04-034 (PH-4-073)
VFDR	This component, which is normally open, required throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 2*CA 519. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0054AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-036 (OP-4-048)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by multiple cables causing spurious operations. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 2CA VA0066AC is required to control level. However, 2CA VA0066AC is subject to loss of offsite power and spurious operation before transfer via cable 2*CA 519. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	2CA VA0064AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-04-037 (PH-4-074)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 2*CA 519. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0064AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-04-038 (OP-4-045)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation of CA MOV due to failure of cable 2*CA 519 prior to transfer to the SSF. This failure condition may 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.
Component(s)	2CA VA0066AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-039 (PH-4-074)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to multiple cable failures. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 2*CA 519. The CA MOV isolation is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0066AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-04-041 (O-4-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 2NI-185A and 2NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2FW-27A, 2ND-19A and 2ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2FW VA0027A - FWST to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-042 (OE-4-010)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*FW 508 and 2*FW 509. Valve 2FW VA0027A is required closed to mitigate FWST drain down to the containment sump (MSO #14). The valve is required closed for CSD to allow alignment of the ND system to NC loop 3. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2FW VA0027A - FWST to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-043 (PH-4-043)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. 2ILE-PZRHTRA can also spuriously operate due to failure of cables 2*ILE 664 and 2*ILE 672. The trip of 2ILE-PZRHTRA can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC Non -Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRA - Backup Pressurizer Heater Group 2A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-044 (PH-4-043)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRB can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Safety/Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-045 (PH-4-043)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRC can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRC - Pressurizer Heater Group 2C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-046 (PH-4-043)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRD can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRD - Pressurizer Heater Group 2D
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-047 (PH-4-007)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps 2NV PU0015 and 2NV PU0016 are located in this area along with valves 2NV-150B, 151A, 221A and 222B. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0001 - 2A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-048 (PH-4-007)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps 2NV PU0015 and 2NV PU0016 are located in this area along with valves 2NV-150B, 151A, 221A and 222B. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0002 - 2B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-049 (PH-4-007)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps 2NV PU0015 and 2NV PU0016 are located in this area along with valves 2NV-150B, 151A, 221A and 222B. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0003 - 2C Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-050 (PH-4-007)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The normal charging pumps 2NV PU0015 and 2NV PU0016 are located in this area along with valves 2NV-150B, 151A, 221A and 222B. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0004 - 2D Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-051 (O-4-023)
VFDR	This component, which is normally open, required closed for HSB, is affected by a spurious concern for the PORV due to the failure of cable 2*NC 799 before the swap to the SSF. Although the PORV Block Valves are unaffected by cable failures for a fire in this area, power may not be available to close the PORV block valves assuming offsite power is lost. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-053 (O-4-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 2NI-185A and 2NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2FW-27A, 2ND-19A and 2ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0004B - 2B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-054 (OE-4-044)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*ND 514. Valve 2ND VA0004B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (2ND VA0019A or 2ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2ND VA0004B - 2B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-055 (O-4-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 2NI-185A and 2NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2FW-27A, 2ND-19A and 2ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0019A - 2A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-056 (OE-4-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by he following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*ND 504. Valve 2ND VA0019A is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (2ND VA0019A or 2ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2ND VA0019A - 2A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-058 (O-4-025)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 2NI-185A and 2NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2FW-27A, 2ND-19A and 2ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-059 (O-4-027)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 2NS-1B and 2NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 2NS-1B and 2NS-18A may be required. Although valves 2NS-3B and 2NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-060 (OE-4-045)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cables 2*NI 510 and 2*NI 661. Valve 2NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve not evaluated in calc MCC 1205.19-00-0084. This failure condition may challenge the 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.
Component(s)	2NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-061 (O-4-025)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 2NI-185A and 2NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2FW-27A, 2ND-19A and 2ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-062 (O-4-027)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 2NS-1B and 2NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 2NS-1B and 2NS-18A may be required. Although valves 2NS-3B and 2NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-063 (OE-4-014)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cables 2*NI 505 and 2*NI 622. Valve 2NI VA0185A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-064 (O-4-027)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 2NS-1B and 2NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 2NS-1B and 2NS-18A may be required. Although valves 2NS-3B and 2NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0001B - 2B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-065 (OE-4-046)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 567. Valve 2NS VA0001B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2NS VA0001B - 2B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-066 (O-4-027)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 2NS-1B and 2NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 2NS-1B and 2NS-18A may be required. Although valves 2NS-3B and 2NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0003B - 2B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-067 (OE-4-016)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 568. Valve 2NS VA0003B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve fails as follows: If valve stalls in the OPEN direction, no damage should occur. Should be able to manually CLOSE valve. If valve stalls in the CLOSE direction, structural limit will be exceeded, probably will result in not being able to reopen. (Reference MCC 1205.19-00-0084). Valve may be closed depending on failure. This failure condition may challenge the 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.
Component(s)	2NS VA0003B - 2B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-068 (O-4-027)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 2NS-1B and 2NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 2NS-1B and 2NS-18A may be required. Although valves 2NS-3B and 2NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0018A - 2A Containment Spray Pump Suction from Containment Sump Isolation Valve

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)
VFDR ID	VFDR-04-069 (OE-4-013)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 511. Valve 2NS VA0018A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve fails as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat. (Reference MCC 1205.19-00-0084). Failure depends on spurious close or open and position needed. If valve fails to the open position, a replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2NS VA0018A - 2A Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)
VFDR ID	VFDR-04-070 (O-4-027)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 2NS-1B and 2NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 2NS-1B and 2NS-18A may be required. Although valves 2NS-3B and 2NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0020A - 2A Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-071 (OE-4-017)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 512. Valve 2NS VA0020A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve fails as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat]. (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may challenge the 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.
Component(s)	2NS VA0020A - 2A Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-074 (O-4-025)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Valves 2NI-185A and 2NI-184B are located in Fire Area 4 and have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2FW-27A, 2ND-19A and 2ND-4B have cable failures that cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-075 (O-4-027)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, and 2NS-20A have cable failures that cause spurious operation and IN 92-18 concerns. Valves 2NI-184B and 2NI-185A have cables that cause spurious operation and IN 92-18 concerns and are located in the affected Fire Area. Repositioning of valves 2NS-1B and 2NS-18A may not be successful due to the IN 92-18 concerns. Replacement of valves 2NS-1B and 2NS-18A may be required. Although valves 2NS-3B and 2NS-20A have a IN 92-18 concern, they do not exceed their structural limits and the valves may be available to close. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-076 (OP-4-018)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0205 - 2C Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-077 (OP-4-018)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0206 - 2B Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-078 (OP-4-018)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0207 - 2A Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-080 (PH-4-031)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0083 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0083 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0078 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0078 or 2SM VA0083 is required closed. Valve 2SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0083 - A Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-081 (PH-4-033)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0089 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0089 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0084 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0084 or 2SM VA0089 is required closed. Valve 2SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0089 - B Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-082 (PH-4-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0095 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0095 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0090 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0090 or 2SM VA0095 is required closed. Valve 2SM VA0095 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0095 - C Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-083 (PH-4-032)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0101 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0101 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0096 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0096 or 2SM VA0101 is required closed. Valve 2SM VA0101 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0101 - D Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-121 (J236)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cable 2*NC 799. The respective NC block valve is affected by assumed loss of off-site power and safety diesels not credited for this area. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0034A - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-140 (OP-4-050)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*FW 508 or 2*FW 509. Cable 2*ATC 601 can also cause spurious operation. Valve 2FW VA0027A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 2NS VA0043A and 2NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-141 (OP-4-050)
VFDR	This component, which is normally off, required off for HSB, is affected by possible spurious operation from failure of cable 2*ILE 664 or interlock failure. Pump 2ND PU0001 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 2NS VA0043A and 2NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND PU0001 - 2A Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-142 (OP-4-050)
VFDR	This component, which is normally off, required off for HSB, is affected by possible start due to interlock failure. Pump 2ND PU0002 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 2NS VA0043A and 2NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND PU0002 - 2B Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-143 (OP-4-050)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*ND 514. Valve 2ND VA0004B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 2NS VA0043A and 2NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0004B - 2B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve

Attachment C

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-144 (OP-4-050)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*ND 504. Cable 2*NI 505 can also cause spurious operation. Valve 2ND VA0019A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 2NS VA0043A and 2NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0019A - 2A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-04-145 (OP-4-050)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 2*NI 661 or 2*RN 542. Valve 2NS VA0038B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 2NS VA0043A and 2NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0038B - 2B Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	04 (Unit 2) - Aux Building Common El 716	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-04-146 (OP-4-050)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 2*NS 543 or 2*NI 622. Valve 2NS VA0043A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and 92-18 concerns. Valves 2NS VA0043A and 2NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0043A - 2A Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-04-148 (OP-4-050)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valves 2NS VA0043A and 2NS VA0038B have cable failures that may spuriously operate the valves. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID: 05 - Unit 1 Train A Diesel Generator Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based
Fire Area Definition

Room ID	Description
703	Diesel Generator 1A

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

Fire Area ID:	05 - Unit 1 Train A Diesel Generator Room	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using B train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using B train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, B train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by B train feeding S/G C and D. Main feed is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train B) provided in the control room.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train B auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Attachment C

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

Fire Area ID: 05 - Unit 1 Train A Diesel Generator Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
703	Diesel Generator 1A	R	None	None	Gaseous Suppression, FA 05 - Halon Suppression: R

Title	Fire Risk Evaluation for Fire Area 05
Risk Summary	The delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.
Δ CDF	Units: [1] 0.00E+00
Δ LERF	Units: [1] 0.00E+00
DID Maintained	A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The risk acceptance criteria are met with substantial margin to account for analytical methods associated with fire scenarios. The scenarios bound potential fuel packages which can reasonably be expected to occur in this area. In the event of no intervention by existing suppression systems or the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the total area burnout scenario. However, the automatic halon suppression system is credited for Risk in the multi-compartment analysis (MCA) evaluations in limiting further fire damage beyond the fire area. The ability to meet nuclear safety performance criteria is ensured.
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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

Attachment C

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

Fire Area ID:	05 - Unit 1 Train A Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-05-02 (OP-5-034)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-05-03 (OP-5-034)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-05-04 (OP-5-055)
VFDR	This component, which is normally off, required off for HSB, is affected by the inability to assure that 1CA PU0003 can be tripped from the Control Room via 1SA-48ABC and 1SA-49AB. The concern is to prevent a S/G overfill condition. Valves 1SA-48ABC and 1SA-49AB may receive a blackout signal or an SSPS signal, which can fail the valves open (de-energize valve solenoids) and start the TDCA Pump. A loss of Train A power to 1CA-54AC and 1CA-66AC may prevent the throttling of the valves. Therefore. The unused S/G levels cannot be maintained. This failure condition may 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.
Component(s)	1CA PU0003 - Unit 1 Turbine Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	05 - Unit 1 Train A Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-05-05 (OP-5-019)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. This failure condition may 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.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-05-06 (OP-5-053)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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."
Component(s)	1CF VA0026AB - 1D S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-05-07 (OP-5-053)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0028AB - 1C S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	05 - Unit 1 Train A Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-05-08 (OP-5-053)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0030AB - 1B S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-05-09 (OP-5-053)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0035AB - 1A S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-05-10 (O-5-004)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 1A or 1B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 1 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCA1) and Pressurizer Heater B (DCB1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater 1A may be unavailable due to a loss of Train A power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	06 - Unit 1 Train B Diesel Generator Room	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
704	Diesel Generator 1B

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

Fire Area ID:	06 - Unit 1 Train B Diesel Generator Room	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using A train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using A train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, A train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by A train feeding S/G A and B. Main feed flow is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train A) provided in the control room.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train A auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Attachment C

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

Fire Area ID: 06 - Unit 1 Train B Diesel Generator Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
704	Diesel Generator 1B	R	None	None	Gaseous Suppression, FA 06 - Halon Suppression: R

Title	Fire Risk Evaluation for Fire Area 06
Risk Summary	The delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.
Δ CDF	Units: [1] 0.00E+00
Δ LERF	Units: [1] 0.00E+00
DID Maintained	A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The risk acceptance criteria are met with substantial margin to account for analytical methods associated with fire scenarios. The scenarios bound potential fuel packages which can reasonably be expected to occur in this area. In the event of no intervention by existing suppression systems or the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the total area burnout scenario. However, the automatic halon suppression system is credited for Risk in the multi-compartment analysis (MCA) evaluations in limiting further fire damage beyond the fire area. The ability to meet nuclear safety performance criteria is ensured.
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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

Attachment C

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

Fire Area ID:	06 - Unit 1 Train B Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-06-01 (OP-6-022)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-06-02 (OP-6-022)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-06-03 (OP-6-031)
VFDR	This component, which is normally off, required off for HSB, is affected by the inability to assure that 1CA PU0003 can be tripped from the Control Room via 1SA-48ABC and 1SA-49AB. The concern is to prevent a S/G overfill condition. Valves 1SA-48ABC and 1SA-49AB may receive a blackout signal or an SSPS signal, which can fail the valves open (de-energize valve solenoids) and start the TDCA Pump. A loss of Train B power to 1CA-38B and 1CA-50B may prevent the throttling of the valves. Therefore, the unused S/G levels cannot be maintained. This failure condition may 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.
Component(s)	1CA PU0003 - Unit 1 Turbine Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	06 - Unit 1 Train B Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-06-04 (OP-6-027)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. This failure condition may 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.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-06-05 (OP-6-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0026AB - 1D S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-06-06 (OP-6-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0028AB - 1C S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	06 - Unit 1 Train B Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-06-07 (OP-6-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0030AB - 1B S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-06-08 (OP-6-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0035AB - 1A S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-06-09 (O-6-014)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 1A or 1B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 1 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCA1) and Pressurizer Heater B (DCB1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater 1B may be unavailable due to a loss of Train B power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRA - Backup Pressurizer Heater Group 1A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	07 - Unit 2 Train A Diesel Generator Room	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
714	Diesel Generator 2A

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

Fire Area ID: 07 - Unit 2 Train A Diesel Generator Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using B train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using B train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	
3. Pressure Control Function	Reactor pressure control from the MCR using B train charging pump with FWST water via the seal injection flow path. Pressurizer code safeties, NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by B train feeding S/G C and D. Main feed is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train B) provided in the control room.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train B auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Attachment C

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

Fire Area ID: 07 - Unit 2 Train A Diesel Generator Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
714	Diesel Generator 2A	R	None	None	Gaseous Suppression, FA 07 - Halon Suppression: R

Title	Fire Risk Evaluation for Fire Area 07
Risk Summary	The delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.
Δ CDF	Units: [2] 0.00E+00
Δ LERF	Units: [2] 0.00E+00
DID Maintained	A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The risk acceptance criteria are met with substantial margin to account for analytical methods associated with fire scenarios. The scenarios bound potential fuel packages which can reasonably be expected to occur in this area. In the event of no intervention by existing suppression systems or the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the total area burnout scenario. However, the automatic halon suppression system is credited for Risk in the multi-compartment analysis (MCA) evaluations in limiting further fire damage beyond the fire area. The ability to meet nuclear safety performance criteria is ensured.
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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

Attachment C

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

Fire Area ID:	07 - Unit 2 Train A Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-07-01 (OP-7-009)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-07-02 (OP-7-009)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-07-03 (OP-7-008)
VFDR	This component, which is normally off, required off for HSB, is affected by the inability to assure that 2CA PU0003 can be tripped from the Control Room via 2SA-48ABC and 2SA-49AB. The concern is to prevent a S/G overfill condition. Valves 2SA-48ABC and 2SA-49AB may receive a blackout signal or an SSPS signal which can fail the valves open (de-energize valve solenoids) and start the TDCA Pump. A loss of Train A power to 2CA-54AC and 2CA-66AC may prevent the throttling of the valves, therefore the unused S/G levels cannot be maintained. This failure condition may 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.
Component(s)	2CA PU0003 - Unit 2 Turbine Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	07 - Unit 2 Train A Diesel Generator Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-07-04 (OP-7-020)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. Power supply 2EPDMXMXA is not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-07-05 (OP-7-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0026AB - 2D S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-07-06 (OP-7-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0028AB - 2C S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	07 - Unit 2 Train A Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-07-07 (OP-7-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0030AB - 2B S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-07-08 (OP-7-021)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0035AB - 2A S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-07-10 (OP-7-005)
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of control due to failure of cables 2*SM 519, 2*SM 538, 2*SM 598, and 2*SM 602. The affected cables are in the fire area. For 2SM VA0001AB and 2SM VA0007AB, the design of the MSIV's require two solenoid valves from either A or B Train to be de-energized in order to close the valves. The "Initiate/Reset" circuit for A and B Train is included off the same parallel path as one of the required solenoid valves. The concern is, an impact to a conductor on part of the circuit that has the "Initiate/Reset" button will disable that function. In addition, the remaining parallel circuits that contain one solenoid valve from each electrical train (individually fused) will remain energized. Due to the impact to the "Initiate/Reset" part of the circuit there are no means to de-energize both solenoid valves of a single electrical train. This will keep the MSIV's from closing. (Non -Safety power associated with the normal open/close buttons from the control room are not credited in the deterministic analysis.) Also, for 2SM VA0003ABC and 2SM VA0005AB the ability to close is affected by the above controls. This failure condition may 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.
Component(s)	2SM VA0001AB - D Main Steam Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	07 - Unit 2 Train A Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-07-11 (OP-7-005)
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of control due to failure of cables 2*SM 519, 2*SM 538, 2*SM 598, and 2*SM 602. The affected cables are in the fire area. For 2SM VA0001AB and 2SM VA0007AB, the design of the MSIV's require two solenoid valves from either A or B Train to be de-energized in order to close the valves. The "Initiate/Reset" circuit for A and B Train is included off the same parallel path as one of the required solenoid valves. The concern is, an impact to a conductor on part of the circuit that has the "Initiate/Reset" button will disable that function. In addition, the remaining parallel circuits that contain one solenoid valve from each electrical train (individually fused) will remain energized. Due to the impact to the "Initiate/Reset" part of the circuit there are no means to de-energize both solenoid valves of a single electrical train. This will keep the MSIV's from closing. (Non -Safety power associated with the normal open/close buttons from the control room are not credited in the deterministic analysis.) Also, for 2SM VA0003ABC and 2SM VA0005AB the ability to close is affected by the above controls. This failure condition may 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.
Component(s)	2SM VA0003ABC - C Main Steam Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-07-12 (OP-7-005)
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of control due to failure of cables 2*SM 519, 2*SM 538, 2*SM 598, and 2*SM 602. The affected cables are in the fire area. For 2SM VA0001AB and 2SM VA0007AB, the design of the MSIV's require two solenoid valves from either A or B Train to be de-energized in order to close the valves. The "Initiate/Reset" circuit for A and B Train is included off the same parallel path as one of the required solenoid valves. The concern is, an impact to a conductor on part of the circuit that has the "Initiate/Reset" button will disable that function. In addition, the remaining parallel circuits that contain one solenoid valve from each electrical train (individually fused) will remain energized. Due to the impact to the "Initiate/Reset" part of the circuit there are no means to de-energize both solenoid valves of a single electrical train. This will keep the MSIV's from closing. (Non -Safety power associated with the normal open/close buttons from the control room are not credited in the deterministic analysis.) Also, for 2SM VA0003ABC and 2SM VA0005AB the ability to close is affected by the above controls. This failure condition may 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.
Component(s)	2SM VA0005AB - B Main Steam Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-07-13 (OP-7-005)
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of control due to failure of cables 2*SM 519, 2*SM 538, 2*SM 598, and 2*SM 602. The affected cables are in the fire area. For 2SM VA0001AB and 2SM VA0007AB, the design of the MSIV's require two solenoid valves from either A or B Train to be de-energized in order to close the valves. The "Initiate/Reset" circuit for A and B Train is included off the same parallel path as one of the required solenoid valves. The concern is, an impact to a conductor on part of the circuit that has the "Initiate/Reset" button will disable that function. In addition, the remaining parallel circuits that contain one solenoid valve from each electrical train (individually fused) will remain energized. Due to the impact to the "Initiate/Reset" part of the circuit there are no means to de-energize both solenoid valves of a single electrical train. This will keep the MSIV's from closing. (Non -Safety power associated with the normal open/close buttons from the control room are not credited in the deterministic analysis.) Also, for 2SM VA0003ABC and 2SM VA0005AB the ability to close is affected by the above controls. This failure condition may 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.
Component(s)	2SM VA0007AB - A Main Steam Isolation Valve

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

Fire Area ID:	07 - Unit 2 Train A Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action	
VFDR ID	VFDR-07-14 (O-7-003)	
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 2A or 2B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 2 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCB1) and Pressurizer Heater B (DCA1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater 2A may be unavailable due to a loss of Train A power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.	
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)	

Fire Area ID:	08 - Unit 2 Train B Diesel Generator Room	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
715	Diesel Generator 2B

Attachment C

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

Fire Area ID:	08 - Unit 2 Train B Diesel Generator Room	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using A train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using A train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, A train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by A train feeding S/G A and B. Main feed flow is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train A) provided in the control room.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train A auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Attachment C

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

Fire Area ID: 08 - Unit 2 Train B Diesel Generator Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
715	Diesel Generator 2B	R	None	None	Gaseous Suppression, FA 08 - Halon Suppression: R

Title	Fire Risk Evaluation for Fire Area 08
Risk Summary	The delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.
Δ CDF	Units: [2] 0.00E+00
Δ LERF	Units: [2] 0.00E+00
DID Maintained	A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The risk acceptance criteria are met with substantial margin to account for analytical methods associated with fire scenarios. The scenarios bound potential fuel packages which can reasonably be expected to occur in this area. In the event of no intervention by existing suppression systems or the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the total area burnout scenario. However, the automatic halon suppression system is credited for Risk in the multi-compartment analysis (MCA) evaluations in limiting further fire damage beyond the fire area. The ability to meet nuclear safety performance criteria is ensured.
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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	08 - Unit 2 Train B Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-08-02 (OP-8-025)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-08-03 (OP-8-025)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-08-04 (OP-8-034)
VFDR	This component, which is normally off, required off for HSB, is affected by the inability to assure that 2CA PU0003 can be tripped from the Control Room via 2SA-48ABC and 2SA-49AB. The concern is to prevent a S/G overfill condition. Valves 2SA-48ABC and 2SA-49AB may receive a blackout signal or an SSPS signal, which can fail the valves open (de-energize valve solenoids) and start the TDCA Pump. A loss of Train B power to 2CA-38B and 2CA-50B may prevent the throttling of the valves, therefore the unused S/G levels cannot be maintained. This failure condition may 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.
Component(s)	2CA PU0003 - Unit 2 Turbine Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	08 - Unit 2 Train B Diesel Generator Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-08-05 (OP-8-029)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. Power supply 2EPDMXMXA is not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-08-06 (OP-8-027)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0026AB - 2D S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-08-07 (OP-8-027)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0028AB - 2C S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	08 - Unit 2 Train B Diesel Generator Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-08-08 (OP-8-027)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0030AB - 2B S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-08-09 (OP-8-027)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0035AB - 2A S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-08-10 (O-8-009)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 2A or 2B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 2 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCB1) and Pressurizer Heater B (DCA1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater 2B may be unavailable due to a loss of Train B power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRA - Backup Pressurizer Heater Group 2A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
702	Electrical Penetration
705	4 kV Switchgear 1ETB 600V MCC

Attachment C

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using A train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using A train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, A train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by A train feeding S/G A and B. Main feed flow is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train A) provided in the control room.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train A auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action

01. 10 CFR 50 Appendix R Deviation from III.G.2 and III.G.3 Requirements (Meggitt Cable) for McGuire Nuclear Station Unit 1

Licensing Basis

Deviation request per Duke letter to the NRC dated 10/03/2002, as supplemented by Duke letter to the NRC dated 11/21/2002, provides justification for not meeting App. R 10 CFR50 III.G.2 and III.G.3 requirements of the approved fire protection program for McGuire, Unit 1.

In the NRC letter dated 01/13/2003, the NRC accepted the deviation since "the protection provided by the silicon dioxide insulated cable in this specific application is equivalent to the protection provided by a 3-hour rated fire barrier. Accordingly, the deviation from the approved fire protection program commitments to 10 CFR Part 50, Appendix R, Section III.G.2, with respect to having a three hour rated fire barrier, in these particular circumstances for Fire Area 11, provides an equivalent level of protection necessary to achieve the underlying purpose of the rule. Based on the NRC staff's review, as described above, the NRC staff concludes that the licensee's identified deviation from its fire protection program as it incorporates Section III.G.2 of Appendix R to 10 CFR Part 50, with respect to the enclosure of cables of one redundant train of safe shutdown equipment in a 3-hour fire rated barrier, is a change to the approved fire protection program that does not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. Therefore, this deviation does not require prior approval of the Commission under Paragraph 2.C.4 of Facility Operating License No. NPF-9."

In conclusion, the bases for previous acceptance remains valid.

Licensing Action

03. Auxiliary Building Expansion Joint Deviation

Licensing Basis

Deviation request per the 8/3/1984 Duke letter to the NRC provides the following justification for the cork seismic expansion joints provided in the 3 hour fire rated floor and wall assemblies as required by Section III.G.2.a of App R, which was approved by the NRC in a letter dated 5/15/1989.

- Predominant combustible in the area is cable insulation.
- Fire detectors are installed on either side of the seismic gaps.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The floors, walls, and ceilings are 12 to 24 inches thick.
- The limited exposed area of the cork.
- The burning characteristics of the cork.
- The combustibles are not installed directly at the seismic gaps.
- In the event a fire develops and transmits heat through the gaps and damages safe shutdown cables, the safe shutdown system is available and is independent of the areas involved.

The NRC approved Duke's deviation request in a letter dated 5/15/1989.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Licensing Action

12. Reactor Building 10 CFR50 Appendix R III.G.2.a Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the omission of standard designed fire tested penetration seals in the three hour fire rated reactor building walls as required by Section III.G.2.a of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- The penetrations and seals are constructed of noncombustible material.
- The annulus areas have automatic suppression.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The reactor building walls are constructed of 3-foot thick reinforced concrete with silicone foam in the expansions joints.
- *Automatic fire detection is provided on both sides of penetrations.*

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

- Limited combustibles in areas.
- The dedicated safe shutdown system is available for safe shutdown should a fire damage normal safe shutdown system components near the subject penetration seals.

This deviation addresses the existing reactor building penetrations for the process piping, spare sleeves, HVAC ducts, and personnel access. In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.1/6.5.2 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the Battery Room from the Electrical Penetration & Switchgear Rooms. The calculation determined the fire barrier is considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Limited in-situ and transient combustibles • Adjacent fire extinguishers and hose stations • Administrative controls for hot work and combustible loading • Area fire detection • Fire brigade response • Penetration seal construction. Due to the conditions identified above and the presence of the SSF, a fire in the Battery Room or the Electrical Penetration & Switchgear Rooms is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 02 Fire Protection Evaluation for Spare Penetrations Sealed on One Side Only
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at penetrations 733-69.1-7, 2-733-175.0-2, 2-733-179.1-1, 2-733-179.1-2, 2-733-179.1-9, 2-733-179.1-10, 2-733-180.1-3, and 2-733-180.1-4. These penetrations contain seal configurations that do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. Each of these penetrations is located in a NRC committed 3-hour fire barrier. The calculation determined the penetration seals currently installed at the penetrations identified are considered adequate for the hazard. This is due to the following: • Both the Type CSFS Gedney Plug installed at penetration 733-69.1-7 and the single steel conduit cap installed at all remaining penetrations will function as 3 hour F rated penetration seal assemblies • Absence of combustible materials in close proximity to either side of these penetrations Because a fire initiating in any area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, postulated safe shutdown methods will not be adversely impacted for these plant areas.

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0014, Att. 10 GL 86-10 Evaluation of Gap in Hatch Covers Separating Motor Driven CA Pump Room (FAs 2 & 3) from Train B Electrical Penetration Rooms (FAs 9-11 & 10-12) for Units 1 and 2
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two hatch openings in the Auxiliarly Building floor on elevation 733'. One hatch opening for each unit located at column lines AA-BB/52-53 for Unit 1 and AA-BB/59-60 for Unit 2 separating FA 2 from FA 9-11 and separating FA 3 from FA 10-12 respectively. The calculation determined the barriers to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • the lack of creditable ignition sources in the vicinity of the hatch openings, • lack of transient fire loads near hatches, • IEEE-383 cables are the main insitu combustibles, • the FA's on each side of barrier have separate ventilation systems, • automatic detection in all four FA's, • manual suppression (fire extinguishers and/or hose stations) in all four FA's. • fire brigade response, • automatic suppression in the vicinity of the hatch openings in FA's 2 and 3.

Attachment C

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
702	Electrical Penetration	None	E, R	E, R	Combustible Control: E Detection System, FA 09-11 Detection: E R Internal Wall: R
705	4 kV Switchgear 1ETB 600V MCC	None	E, R	E, R	Combustible Control: E Detection System, FA 09-11 Detection: E R Internal Wall: R MI on some Train A cables: R

Title	Fire Risk Evaluation for Fire Area 09-11
Risk Summary	The delta CDF and delta LERF are above the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk but within the acceptance thresholds in RG 1.174. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.
Δ CDF	Units: [1] 1.55E-06
Δ LERF	Units: [1] 2.72E-08
DID Maintained	A review of defense in depth and risk evaluation results shows that Regulatory Guide 1.174 risk criteria are met and that the balance of defense in depth is maintained. The Regulatory Guide 1.174 risk acceptance criteria are met with margin to account for analytical methods associated with fire scenarios. These analyzed scenarios credit Train A cables located in Train B Switchgear Room as fire resistant mineral insulated cables: therefore, this additional fire protection feature is required. Administrative controls would not provide appreciable benefit to the overall fire area risk. The installed detection system is required to meet risk criteria to ensure the fire brigade response is effectively initiated. In addtion, an internal wall between rooms is required to meet risk criteria. The FPRA did not credit the wall's rating, but the wall itself was relied on to limit the zone of influence for some scenarios. Provided the wall remains intact with no significant openings, the FPRA results are not affected. Given the actions required by the risk analysis and the DID assessment, the ability to meet nuclear safety performance criteria is ensured.
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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

Attachment C

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-01 (OE-9-11-001)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Any of the following cables (1*KC 662, 1*NC 534, 1*NC 599, 1*NC 909, or 1*NC 941) can cause a spurious opening of the PORV. Any of the following cables 1*NC 534, 1*NC 528, or 1*NC 533 can cause a spurious operation of the block valve. Valve not evaluated in calc MCC 1205.19-00-0084. In addition, either cables 1*NC 528 or 1*NC 533 can cause a IN 92-18 concern on the block valve (MSO #17 & 18). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0031B - Pressurizer PORV Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-9-11-02 (OP-9-11-003)
VFDR	This component, which is normally open, required to be cycled for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. This failure condition may 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.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-9-11-03 (OP-9-11-013)
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of Train B power. FWST diversion to the NS system (MSO #15) may occur due to spurious cable failures pertaining to U1 Train B Containment Spray Pump (cable 1*NS 553) and the outlet valves 1NS-12B (cable 1*NS 594) and 1NS-15B (cable 1*NS 594). This failure condition may challenge the 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.
Component(s)	1NS VA0003B - 1B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-04 (OP-9-11-018)
VFDR	This component, which is normally Energized, required Energized for HSB, may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cables 1*RN 780 and 1*WZ 539 may propagate upstream and cause a loss of power to 1EPEMXEMXH and OEPIPNEKA. This failure condition may challenge 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.
Component(s)	0EPIPNEKA - EKA Power Panelboard
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-05 (OP-9-11-018)
VFDR	This component, which is normally on, required on for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cables 1*RN 780 and 1*WZ 539 may propagate upstream and cause a loss of power to 1EPEMXEMXH and OEPIPNEKA. This failure condition may challenge 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.
Component(s)	0VC AH0001 - Train A Control Room Air Handling Unit (CR-AHU-1),
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-06 (OP-9-11-018)
VFDR	This component, which is normally open, required open for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cables 1*RN 780 and 1*WZ 539 may propagate upstream and cause a loss of power to 1EPEMXEMXH and OEPIPNEKA. This failure condition may challenge 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.
Component(s)	0VC DA0018 - Train A Control Room Air Handling Unit (CR-AHU-1) Inlet Damper
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-07 (OP-9-11-018)
VFDR	This component, which is normally open, required open for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cables 1*RN 780 and 1*WZ 539 may propagate upstream and cause a loss of power to 1EPEMXEMXH and OEPIPNEKA. This failure condition may challenge 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.
Component(s)	0VC DA0021 - Train A Control Room Air Handling Unit (CR-AHU-1) Outlet Damper
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-08 (OP-9-11-018)
VFDR	This component, which is normally on, required on for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cables 1*RN 780 and 1*WZ 539 may propagate upstream and cause a loss of power to 1EPEMXEMXH and OEPIPNEKA. This failure condition may challenge 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.
Component(s)	0YC CH0005 - Train A Control Room Area Chiller (CRA-C-1)
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-09 (OP-9-11-018)
VFDR	This component, which is normally energized, required energized for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cables 1*RN 780 and 1*WZ 539 may propagate upstream and cause a loss of power to 1EPEMXEMXH and OEPIPNEKA. This failure condition may challenge 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.
Component(s)	1EPEMXEMXH - 1EMXH 600V Essential MCC
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-10 (OP-9-11-019)
VFDR	This component, which is normally cycled, required off for HSB, is affected by spurious actuation due to failure of cables 1ILE 707 and 1ILE 708. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRD - Pressurizer Heater Group 1D
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-9-11-11 (OP-9-11-020)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cable 1*RN 562 which could spuriously open valves 1NC VA00274B and 1NC VA00275B. Either valve is required closed for NC inventory control (MSO #19). Note: this flow path has an orifice limiting flow. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0274B - B Train Head Vent to PRT Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-9-11-12 (OP-9-11-020)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cable 1*RN 562 which could spuriously open valves 1NC VA00274B and 1NC VA00275B. Either valve is required closed for NC inventory control (MSO #19). Note: this flow path has an orifice limiting flow. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0275B - B Train Head Vent to PRT Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-9-11-13 (OP-9-11-021)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cables 1*NV 545A and 1*NV 545 which could spuriously open valves 1NV VA0024B and 1NV VA0025B. Either valve is required closed for NC inventory control (MSO #8). This failure condition may challenge the 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.
Component(s)	1NV VA0024B - C Reactor Coolant Loop to Excess Letdown Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-14 (OP-9-11-021)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cables 1*NV 545A and 1*NV 545 which could spuriously open valves 1NV VA0024B and 1NV VA0025B. Either valve is required closed for NC inventory control (MSO #8). This failure condition may challenge the 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.
Component(s)	1NV VA0025B - C Reactor Coolant Loop to Excess Letdown Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-15 (OP-9-11-022)
VFDR	This component, which is normally open, required open for HSB, is affected by a potential hot short in cable 1NV 859 which could energized solenoid 1NV SV2380. This would transfer manual control of valve 1NV VA0238 to the Auxiliary Shutdown Panel. This failure condition may challenge the Inventory Control Nuclear Safety 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.
Component(s)	1NV VA0238 - Charging Line Flow Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-9-11-16 (OP-9-11-023)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-17 (OP-9-11-023)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-9-11-18 (OP-9-11-028)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train B power and the failure of numerous cables affecting 1CA VA0044B, 1CA VA0046B and 1CA PU0002 such that they are unavailable to throttle flow. Manual valve 1CA VA0043 is available for local control. This is a potential overfill concern on unused Steam Generator 1C (MSO #29). This failure condition may 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. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0044B - 1B Auxiliary Feedwater Pump Discharge to 1C S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-19 (OP-9-11-028)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train B power and the failure of numerous cables affecting 1CA VA0044B, 1CA VA0046B and 1CA PU0002 such that they are unavailable to throttle flow. Manual valve 1CA VA0043 is available for local control. This is a potential overfill concern on unused Steam Generator 1C (MSO #29). This failure condition may 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. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0046B - 1B Auxiliary Feedwater Pump Discharge to 1C S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-20 (OP-9-11-029)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train B power and the failure of numerous cables affecting 1CA VA0040B, 1CA VA0042B and 1CA PU0002 such that they are unavailable to throttle flow. Manual valve 1CA VA0039 is available for local control. This is a potential overfill concern on unused Steam Generator 1D (MSO #29). This failure condition may 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. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0040B - 1B Auxiliary Feedwater Pump Discharge to 1D S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-21 (OP-9-11-029)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train B power and the failure of numerous cables affecting 1CA VA0040B, 1CA VA0042B and 1CA PU0002 such that they are unavailable to throttle flow. Manual valve 1CA VA0039 is available for local control. This is a potential overfill concern on unused Steam Generator 1D (MSO #29). This failure condition may 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. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0042B - 1B Auxiliary Feedwater Pump Discharge to 1D S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-22 (OP-9-11-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0026AB - 1D S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-23 (OP-9-11-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0028AB - 1C S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-24 (OP-9-11-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0030AB - 1B S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-25 (OP-9-11-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0035AB - 1A S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-26 (OP-9-11-031)
VFDR	This component, which is normally off, required off for HSB, is affected by the inability to assure that 1CA PU0003 can be tripped from the Control Room via 1SA-48ABC and 1SA-49AB. The concern is to prevent a S/G overfill condition. Valves 1SA-48ABC and 1SA-49AB may receive a blackout signal or an SSPS signal, which can fail the valves open (de-energize valve solenoids) and start the TDCA Pump. The loss of Train B power and the failure of numerous cables affect 1CA VA0048AB, 1CA VA0050B, 1CA VA0036AB, and 1CA VA0038B, such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generators 1C and 1D. This failure condition may 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.
Component(s)	1CA PU0003 - Unit 1 Turbine Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-27 (OP-9-11-033)
VFDR	This component, which is normally cycled, required off for HSB, is affected by numerous cable failures which can cause spurious operation, loss of control, or loss of power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-28 (OP-9-11-034)
VFDR	This component, which is normally available, required available for HSB, is affected by the failure of Channel #1 (cable 1*SM 527), Channel #2 (cable 1*SM 528), and Channel #3 (1*SM 529), which can cause the loss of these indication loops. One channel of indication is required. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM P 5110 - SG B Steam Line Pressure Indication Channel # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-29 (OP-9-11-034)
VFDR	This component, which is normally available, required available for HSB, is affected by the failure of Channel #1 (cable 1*SM 527), Channel #2 (cable 1*SM 528), and Channel #3 (1*SM 529), which can cause the loss of these indication loops. One channel of indication is required. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM P 5120 - SG B Steam Line Pressure Indication Channel # 2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-9-11-30 (OP-9-11-034)
VFDR	This component, which is normally available, required available for HSB, is affected by the failure of Channel #1 (cable 1*SM 527), Channel #2 (cable 1*SM 528), and Channel #3 (1*SM 529), which can cause the loss of these indication loops. One channel of indication is required. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM P 5130 - SG B Steam Line Pressure Indication Channel # 3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-32 (OP-9-11-036)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation. Any of the following cables (1*KC 662, 1*NC 534, 1*NC 599, 1*NC 909, or 1*NC 941) can cause a spurious opening of the PORV. Any of the following cables 1*NC 534, 1*NC 528, or 1*NC 533 can cause a spurious operation of the block valve. In addition, either cables 1*NC 528 or 1*NC 533 can cause a IN 92-18 concern on the block valve (MSO #17 & 18). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0032B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-9-11-33 (PH-9-11-001)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Any of the following cables (1*NC 534, 1*NC 599, or 1*NC 909) can cause a spurious opening of the PORV. Any of the following cables 1*NC 534, 1*NC 514, or 1*NC 533 can cause a spurious operation of the block valve. In addition, either cables 1*NC 514 or 1*NC 533 can cause a IN 92-18 concern on the block valve. (MSO #17 & 18) This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0035B - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-9-11-34 (OP-9-11-037)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation. Any of the following cables (1*NC 534, 1*NC 599, or 1*NC 909) can cause a spurious opening of the PORV. Any of the following cables 1*NC 534, 1*NC 514, or 1*NC 533 can cause a spurious operation of the block valve. In addition, either cables 1*NC 514 or 1*NC 533 can cause a IN 92-18 concern on the block valve (MSO #17 & 18). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0036B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	09-11 - Unit 1 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-9-11-35 (OE-9-11-002)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Any of the following cables (1*NC 534, 1*NC 599, or 1*NC 909) can cause a spurious opening of the PORV. Any of the following cables 1*NC 534, 1*NC 514, or 1*NC 533 can cause a spurious operation of the block valve. Valve not evaluated in calc MCC 1205.19-00-0084. In addition, either cables 1*NC 514 or 1*NC 533 can cause a IN 92-18 concern on the block valve. Valve not evaluated in calc MCC 1205.19-00-0084 (MSO #17 & 18). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0035B - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-9-11-36 (O-9-11-007)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 1A or 1B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 1 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCA1) and Pressurizer Heater B (DCB1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater Group 1B is unavailable due to spurious and DC control power cable failures and loss of Train B power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRA - Backup Pressurizer Heater Group 1A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
713	Electrical Penetration
716	4 kV Switchgear 1ETB 600V MCC

Attachment C

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using A train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using A train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, A train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by A train feeding S/G A and B. Main feed flow is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train A) provided in the control room.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train A auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel genereators.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action

03. Auxiliary Building Expansion Joint Deviation

Licensing Basis

Deviation request per the 8/3/1984 Duke letter to the NRC provides the following justification for the cork seismic expansion joints provided in the 3 hour fire rated floor and wall assemblies as required by Section III.G.2.a of App R, which was approved by the NRC in a letter dated 5/15/1989.

- *Predominant combustible in the area is cable insulation.*
- Fire detectors are installed on either side of the seismic gaps.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The floors, walls, and ceilings are 12 to 24 inches thick.
- The limited exposed area of the cork.
- The burning characteristics of the cork.
- The combustibles are not installed directly at the seismic gaps.
- In the event a fire develops and transmits heat through the gaps and damages safe shutdown cables, the safe shutdown system is available and is independent of the areas involved.

The NRC approved Duke's deviation request in a letter dated 5/15/1989.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Licensing Action

12. Reactor Building 10 CFR50 Appendix R III.G.2.a Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the omission of standard designed fire tested penetration seals in the three hour fire rated reactor building walls as required by Section III.G.2.a of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- The penetrations and seals are constructed of noncombustible material.
- The annulus areas have automatic suppression.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The reactor building walls are constructed of 3-foot thick reinforced concrete with silicone foam in the expansions joints.
- Automatic fire detection is provided on both sides of penetrations.
- Limited combustibles in areas.
- The dedicated safe shutdown system is available for safe shutdown should a fire damage normal safe shutdown system components near the subject penetration seals.

This deviation addresses the existing reactor building penetrations for the process piping, spare sleeves, HVAC ducts, and personnel access. In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0010 Part 6.5.1/6.5.2 McGuire Fire Barrier Penetration Seal Safety Analysis
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the Battery Room from the Electrical Penetration & Switchgear Rooms. The calculation determined the fire barrier is considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Limited in-situ and transient combustibles • Adjacent fire extinguishers and hose stations • Administrative controls for hot work and combustible loading • Area fire detection • Fire brigade response • Penetration seal construction. Due to the conditions identified above and the presence of the SSF, a fire in the Battery Room or the Electrical Penetration & Switchgear Rooms is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 02 Fire Protection Evaluation for Spare Penetrations Sealed on One Side Only
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at penetrations 733-69.1-7, 2-733-175.0-2, 2-733-179.1-1, 2-733-179.1-2, 2-733-179.1-9, 2-733-179.1-10, 2-733-180.1-3, and 2-733-180.1-4. These penetrations contain seal configurations that do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. Each of these penetrations is located in a NRC committed 3-hour fire barrier. The calculation determined the penetration seals currently installed at the penetrations identified are considered adequate for the hazard. This is due to the following: • Both the Type CSFS Gedney Plug installed at penetration 733-69.1-7 and the single steel conduit cap installed at all remaining penetrations will function as 3 hour F rated penetration seal assemblies • Absence of combustible materials in close proximity to either side of these penetrations Because a fire initiating in any area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, postulated safe shutdown methods will not be adversely impacted for these plant areas.

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0014, Att. 10 GL 86-10 Evaluation of Gap in Hatch Covers Separating Motor Driven CA Pump Room (FAs 2 & 3) from Train B Electrical Penetration Rooms (FAs 9-11 & 10-12) for Units 1 and 2
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two hatch openings in the Auxiliarly Building floor on elevation 733'. One hatch opening for each unit located at column lines AA-BB/52-53 for Unit 1 and AA-BB/59-60 for Unit 2 separating FA 2 from FA 9-11 and separating FA 3 from FA 10-12 respectively. The calculation determined the barriers to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • the lack of creditable ignition sources in the vicinity of the hatch openings, • lack of transient fire loads near hatches, • IEEE-383 cables are the main insitu combustibles, • the FA's on each side of barrier have separate ventilation systems, • automatic detection in all four FA's, • manual suppression (fire extinguishers and/or hose stations) in all four FA's. • fire brigade response, • automatic suppression in the vicinity of the hatch openings in FA's 2 and 3.

Attachment C

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

Fire Area ID: 10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
713	Electrical Penetration	None	E, R	E, R	Combustible Control: E Detection System, FA 10-12 Detection: E R Internal Wall: R
716	4 kV Switchgear 1ETB 600V MCC	None	E, R	E, R	Combustible Control: E Detection System, FA 10-12 Detection: E R Internal Wall: R

Title Fire Risk Evaluation for Fire Area 10-12

Risk Summary The delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [2] 6.00E-08

Δ LERF Units: [2] 1.40E-09

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. A review of the analyzed fire scenarios shows that additional administrative controls would not provide an appreciable benefit to the overall fire area risk. The installed detection system is required to meet risk criteria to ensure the fire brigade response is effectively initiated. In addition, an internal wall between rooms is required to meet risk criteria. The FPRA did not credit the wall's rating, but the wall itself was relied on to limit the zone of influence for some scenarios. Provided the wall remains intact with no significant openings, the FPRA results are not affected. Given the actions required by the risk analysis and the DID assessment, the ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

Attachment C

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-01 (O-10-12-004)
VFDR	This component, which is normally open, required open for HSB, is affected by a potential hot short in cable 2NV 872 which could energized solenoid 2NV SV2380. This would transfer manual control of valve 2NV VA0238 to the Auxiliary Shutdown Panel. This failure condition may challenge the 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.
Component(s)	2NV VA0238 - Charging Line Flow Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-10-12-02 (O-10-12-007)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following. Pressurizer Heater Groups 2A or 2B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 2 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCB1) and Pressurizer Heater B (DCA1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater Group 2A is unavailable due to spurious and DC control power failures. Pressurizer Heater Group 2B is unavailable due to spurious and control power failures as well as AC power failures to the heaters. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRA - Backup Pressurizer Heater Group 2A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-03 (OE-10-12-001)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Cable 2*NC 798 can cause a spurious opening of the PORV. Either of the following cables 2*NC 761 and 2*NC 776 can cause a spurious operation of the block valve. Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. In addition, either cables 2*NC 761 and 2*NC 776 can cause a IN 92-18 concern on the block valve (MSO #17 & 18). This failure condition may challenge the 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.
Component(s)	2NC VA0031B - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-04 (OP-10-12-037)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation. Cable 2*NC 798 can cause a spurious opening of the PORV. Either of the following cables 2*NC 761 and 2*NC 776 can cause a spurious operation of the block valve. In addition, either cables 2*NC 761 and 2*NC 776 can cause a IN 92-18 concern on the block valve (MSO #17 & 18). This failure condition may challenge the 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.
Component(s)	2NC VA0032B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-10-12-05 (OP-10-12-038)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation. Cable 2*NC 798 can cause a spurious opening of the PORV. Either of the following cables 2*NC 761 and 2*NC 776 can cause a spurious operation of the block valve. In addition, either cables 2*NC 761 and 2*NC 776 can cause a IN 92-18 concern on the block valve (MSO #17 & 18). This failure condition may challenge the 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.
Component(s)	2NC VA0032B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-10-12-06 (OE-10-12-001)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Cable 2*NC 798 can cause a spurious opening of the PORV. Either of the following cables 2*NC 761 and 2*NC 776 can cause a spurious operation of the block valve. Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. In addition, either cables 2*NC 761 and 2*NC 776 can cause a IN 92-18 concern on the block valve (MSO #17 & 18). This failure condition may challenge the 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.
Component(s)	2NC VA0035B - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-07 (OP-10-12-002)
VFDR	This component, which is normally open, required to be cycled for HSB, is affected by an assumed loss of offsite power. Power supply 2EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-10-12-08 (OP-10-12-005)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Power supply 2EPDMXMXB is not diesel backed. Valve could spuriously open due to failure of cable 2CM 603. Valve is required closed to preclude air entrapment concerns. This failure condition may 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.
Component(s)	2CM VA0265 - Unit 2 Hotwell Auxiliary Feedwater Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-09 (OP-10-12-007)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by failure of cables 2*ILE 678, 2*ILE 679 or 2*ILE 705 which can spuriously energize this heater group. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRA - Backup Pressurizer Heater Group 2A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-10 (OP-10-12-007)
VFDR	This component, which is normally cycled, required off for HSB, is affected by spurious actuation due to failure of cable 2ILE 711 and 2ILE 707. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRD - Pressurizer Heater Group 2D
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-10-12-11 (OP-10-12-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of Train B power. FWST diversion to the NS system (MSO #15) may occur due to spurious cable failures pertaining to U2 Train B Containment Spray Pump (cables 2*NS 560 and 2*NS 593) and the outlet valves 2NS-12B (cable 2*NS 583) and 2NS-15B (cable 2*NS 583). This failure condition may challenge the 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.
Component(s)	2NS VA0003B - 2B Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-10-12-12 (OP-10-12-013)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cables 2*NV 573, 2*NV 842 and 2*NV 842A which could spuriously open valves 2NV VA0024B and 2NV VA0025B. Either valve is required closed for NC inventory control (MSO #8). This failure condition may challenge the 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.
Component(s)	2NV VA0024B - C Reactor Coolant Loop to Excess Letdown Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-13 (OP-10-12-013)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cables 2*NV 573, 2*NV 842 and 2*NV 842A which could spuriously open valves 2NV VA0024B and 2NV VA0025B. Either valve is required closed for NC inventory control (MSO #8). This failure condition may challenge the 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.
Component(s)	2NV VA0025B - C Reactor Coolant Loop to Excess Letdown Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-14 (OP-10-12-016)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-10-12-15 (OP-10-12-016)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-10-12-16 (OP-10-12-019)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train B power and the failure of numerous cables affecting 2CA VA0044B, 2CA VA0046B and 2CA PU0002 such that they are unavailable to throttle flow. Manual valve 2CA VA0043 is available for local control. This is a potential overfill concern on unused Steam Generator 2C (MSO #29). This failure condition may 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.
Component(s)	2CA VA0044B - 2B Auxiliary Feedwater Pump Discharge to 2C S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-17 (OP-10-12-019)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train B power and the failure of numerous cables affecting 2CA VA0044B, 2CA VA0046B and 2CA PU0002 such that they are unavailable to throttle flow. Manual valve 2CA VA0043 is available for local control. This is a potential overfill concern on unused Steam Generator 2C (MSO #29). This failure condition may 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.
Component(s)	2CA VA0046B - 2B Auxiliary Feedwater Pump Discharge to 2C S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-18 (OP-10-12-020)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train B power and the failure of numerous cables affecting 2CA VA0040B, 2CA VA0042B and 2CA PU0002 such that they are unavailable to throttle flow. Manual valve 2CA VA0039 is available for local control. This is a potential overfill concern on unused Steam Generator 2D (MSO #29). This failure condition may 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.
Component(s)	2CA VA0040B - 2B Auxiliary Feedwater Pump Discharge to 2D S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-19 (OP-10-12-020)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train B power and the failure of numerous cables affecting 2CA VA0040B, 2CA VA0042B and 2CA PU0002 such that they are unavailable to throttle flow. Manual valve 2CA VA0039 is available for local control. This is a potential overfill concern on unused Steam Generator 2D (MSO #29). This failure condition may 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.
Component(s)	2CA VA0042B - 2B Auxiliary Feedwater Pump Discharge to 2D S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-20 (OP-10-12-027)
VFDR	This component, which is normally energized, required energized for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cable 1*WZ 548 may propagate upstream and cause a loss of power to 1EPEMXEMXH, 1EPEMXEMXH1 and OEPIPNEKA. Breaker 1EMXH1-1C does not coordinate with upstream breakers 1EMXH1-1A and 1EMXH-8A for this fire area. Breaker 1EMXH1-1C may not clear possible faults of cable 1*WZ 548 which is routed in this area. 0WZ PU0001 (fed from 1EMXH1) is required to be operable for a fire in area, no other WZ pumps available. Power from 1EMXH to EKA will also be restored which brings back required power to Train A Control Room Ventilation. This failure condition may challenge 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.
Component(s)	0EPIPNEKA - EKA Power Panelboard
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-21 (OP-10-12-027)
VFDR	This component, which is normally on, required on for HSB, is affected by Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cable 1*WZ 548 may propagate upstream and cause a loss of power to 1EPEMXEMXH, 1EPEMXEMXH1 and OEPIPNEKA. Breaker 1EMXH1-1C does not coordinate with upstream breakers 1EMXH1-1A and 1EMXH-8A for this fire area. Breaker 1EMXH1-1C may not clear possible faults of cable 1*WZ 548 which is routed in this area. 0WZ PU0001 (fed from 1EMXH1) is required to be operable for a fire in area, no other WZ pumps available. Power from 1EMXH to EKA will also be restored which brings back required power to Train A Control Room Ventilation. This failure condition may challenge 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.
Component(s)	0VC AH0001 - A Control Room Air Handling Unit (CR-AHU-1),
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-22 (OP-10-12-027)
VFDR	This component, which is normally open, required open for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cable 1*WZ 548 may propagate upstream and cause a loss of power to 1EPEMXEMXH, 1EPEMXEMXH1 and OEPIPNEKA. Breaker 1EMXH1-1C does not coordinate with upstream breakers 1EMXH1-1A and 1EMXH-8A for this fire area. Breaker 1EMXH1-1C may not clear possible faults of cable 1*WZ 548 which is routed in this area. 0WZ PU0001 (fed from 1EMXH1) is required to be operable for a fire in area, no other WZ pumps available. Power from 1EMXH to EKA will also be restored which brings back required power to Train A Control Room Ventilation. This failure condition may challenge 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.
Component(s)	0VC DA0018 - A Control Room Air Handling Unit (CR-AHU-1) Inlet Damper
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-23 (OP-10-12-027)
VFDR	This component, which is normally open, required open for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cable 1*WZ 548 may propagate upstream and cause a loss of power to 1EPEMXEMXH, 1EPEMXEMXH1 and OEPIPNEKA. Breaker 1EMXH1-1C does not coordinate with upstream breakers 1EMXH1-1A and 1EMXH-8A for this fire area. Breaker 1EMXH1-1C may not clear possible faults of cable 1*WZ 548 which is routed in this area. 0WZ PU0001 (fed from 1EMXH1) is required to be operable for a fire in area, no other WZ pumps available. Power from 1EMXH to EKA will also be restored which brings back required power to Train A Control Room Ventilation. This failure condition may challenge 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.
Component(s)	0VC DA0021 - A Control Room Air Handling Unit (CR-AHU-1) Outlet Damper
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-24 (OP-10-12-027)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cable 1*WZ 548 may propagate upstream and cause a loss of power to 1EPEMXEMXH, 1EPEMXEMXH1 and OEPIPNEKA. Breaker 1EMXH1-1C does not coordinate with upstream breakers 1EMXH1-1A and 1EMXH-8A for this fire area. Breaker 1EMXH1-1C may not clear possible faults of cable 1*WZ 548 which is routed in this area. 0WZ PU0001 (fed from 1EMXH1) is required to be operable for a fire in area, no other WZ pumps available. Power from 1EMXH to EKA will also be restored which brings back required power to Train A Control Room Ventilation. This failure condition may challenge 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.
Component(s)	0WZ PU0001 - A Groundwater Sump Pump A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-25 (OP-10-12-027)
VFDR	This component, which is normally on, required on for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cable 1*WZ 548 may propagate upstream and cause a loss of power to 1EPEMXEMXH, 1EPEMXEMXH1 and OEPIPNEKA. Breaker 1EMXH1-1C does not coordinate with upstream breakers 1EMXH1-1A and 1EMXH-8A for this fire area. Breaker 1EMXH1-1C may not clear possible faults of cable 1*WZ 548 which is routed in this area. 0WZ PU0001 (fed from 1EMXH1) is required to be operable for a fire in area, no other WZ pumps available. Power from 1EMXH to EKA will also be restored which brings back required power to Train A Control Room Ventilation. This failure condition may challenge 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.
Component(s)	0YC CH0005 - A Control Area Ventilation Chiller (CRA-C-1),
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-26 (OP-10-12-027)
VFDR	This component, which is normally energized, required to be energized for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cable 1*WZ 548 may propagate upstream and cause a loss of power to 1EPEMXEMXH, 1EPEMXEMXH1 and OEPIPNEKA. Breaker 1EMXH1-1C does not coordinate with upstream breakers 1EMXH1-1A and 1EMXH-8A for this fire area. Breaker 1EMXH1-1C may not clear possible faults of cable 1*WZ 548 which is routed in this area. 0WZ PU0001 (fed from 1EMXH1) is required to be operable for a fire in area, no other WZ pumps available. Power from 1EMXH to EKA will also be restored which brings back required power to Train A Control Room Ventilation. This failure condition may challenge 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.
Component(s)	1EPEMXEMXH - 1EMXH 600V Essential MCC
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-27 (OP-10-12-027)
VFDR	This component, which is normally energized, required to be energized for HSB, is affected by a breaker coordination concern. Component may fail due to loss of power caused from the cascading effect of non-coordinated loads fed from 1EPEMXEMXH1. A fault on cable 1*WZ 548 may propagate upstream and cause a loss of power to 1EPEMXEMXH, 1EPEMXEMXH1 and OEPIPNEKA. Breaker 1EMXH1-1C does not coordinate with upstream breakers 1EMXH1-1A and 1EMXH-8A for this fire area. Breaker 1EMXH1-1C may not clear possible faults of cable 1*WZ 548 which is routed in this area. 0WZ PU0001 (fed from 1EMXH1) is required to be operable for a fire in area, no other WZ pumps available. Power from 1EMXH to EKA will also be restored which brings back required power to Train A Control Room Ventilation. This failure condition may challenge 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.
Component(s)	1EPEMXEMXH1 - 1EMXH1 600V Essential MCC
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-28 (OP-10-12-030)
VFDR	This component, which is normally available, required available for HSB, is affected by the failure of Channel #1 (cable 2*SM 576), Channel #2 (cable 2*SM 578), and Channel #3 (2*SM 579), which can cause the loss of these indication loops. One channel of indication is required. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5110 - 2B S/G Steam Line Pressure Indication Ch #1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-29 (OP-10-12-030)
VFDR	This component, which is normally available, required available for HSB, is affected by the failure of Channel #1 (cable 2*SM 576), Channel #2 (cable 2*SM 578), and Channel #3 (2*SM 579), which can cause the loss of these indication loops. One channel of indication is required. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5120 - 2B S/G Steam Line Pressure Indication Ch #2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-30 (OP-10-12-030)
VFDR	This component, which is normally available, required available for HSB, is affected by the failure of Channel #1 (cable 2*SM 576), Channel #2 (cable 2*SM 578), and Channel #3 (2*SM 579), which can cause the loss of these indication loops. One channel of indication is required. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5130 - 2B S/G Steam Line Pressure Indication Ch #3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-31 (OP-10-12-033)
VFDR	This component, which is normally cycled, required off for HSB, is affected by numerous cable failures that can cause spurious operation, loss of control, or loss of power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-32 (OP-10-12-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0026AB - 2D S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-33 (OP-10-12-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0028AB - 2C S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-34 (OP-10-12-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0030AB - 2B S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-35 (OP-10-12-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0035AB - 2A S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-10-12-36 (OP-10-12-035)
VFDR	This component, which is normally off, required off for HSB, is affected by the inability to assure that 2CA PU0003 can be tripped from the Control Room via 2SA-48ABC and 2SA-49AB. The concern is to prevent a S/G overfill condition. Valves 2SA-48ABC and 2SA-49AB may receive a blackout signal or an SSPS signal, which can fail the valves open (de-energize valve solenoids) and start the TDCA Pump. The loss of Train B power and the failure of numerous cables affect 2CA VA0048AB, 2CA VA0050B, 2CA VA0036AB, and 2CA VA0038B, such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generators 2C and 2D. This failure condition may 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.
Component(s)	2CA PU0003 - Unit 2 Turbine Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	10-12 - Unit 2 Train B Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-10-12-37 (OP-10-12-037)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Cable 2*NC 798 can cause a spurious opening of the PORV. Either of the following cables 2*NC 761 and 2*NC 776 can cause a spurious operation of the block valve. In addition, either cables 2*NC 761 and 2*NC 776 can cause a IN 92-18 concern on the block valve (MSO #17 & 18). This failure condition may challenge the 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.
Component(s)	2NC VA0031B - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-10-12-38 (OP-10-12-038)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Cable 2*NC 798 can cause a spurious opening of the PORV. Either of the following cables 2*NC 761 and 2*NC 776 can cause a spurious operation of the block valve. In addition, either cables 2*NC 761 and 2*NC 776 can cause a IN 92-18 concern on the block valve (MSO #17 & 18). This failure condition may challenge the 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.
Component(s)	2NC VA0035B - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID: 13 (Unit 1) - Battery Rooms Common
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based
Fire Area Definition

Room ID	Description
648	Cable Shaft
701	Battery Room
706	Battery Room
707	Battery Room
708	Battery Room
709	Battery Room
710	Battery Room
711	Battery Room

Attachment C

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring available in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Attachment C

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0002, Sect. 9.2.3 Fire Exposure to Unprotected Steel Hangers for HVAC Ducts
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Supplement No. 2 of The Safety Evaluation Report states, "The applicant has further agreed to provide fire proofed supports for those HVAC ducts in safety related areas to ensure the integrity of the barrier penetration between the duct work, including the damper and the fire barrier." Response to Appendix A to Branch Technical Position 9.5-1 states, "Where Control Area Ventilation System ducts penetrate fire barriers, supports are located within five feet of each penetration on each side of the barrier. In areas where fire loading analysis indicates a need, the supports are fire proofed to a rating equivalent to the damper located in the penetration." This evaluation analyzed the Battery Room; specifically the HVAC ducts penetrating the duct shafts between Col. DD & EE near Col. 54 and Col. 56. The purpose of this calculation is to perform a fire hazards analysis to determine if the pyrocrete currently protecting some HVAC hangers can be removed or abandoned in place without increasing the risk of collapse of the ducts due to fire. The calculation determined the pyrocrete material can be removed or abandoned in place based on the following: • Low in situ and transient combustible loading • Room geometry • Area fire detection • Fire Brigade response. This meets the requirements of the Response to Appendix A to Branch Technical Position 9.5-1, and therefore does not require further analysis.

Engineering Evaluation ID	MCC-1435.03-00-0010 Part 6.5.1/6.5.2 McGuire Fire Barrier Penetration Seal Safety Analysis
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the Battery Room from the Electrical Penetration & Switchgear Rooms. The calculation determined the fire barrier is considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Limited in-situ and transient combustibles • Adjacent fire extinguishers and hose stations • Administrative controls for hot work and combustible loading • Area fire detection

	• Fire brigade response • Penetration seal construction. Due to the conditions identified above and the presence of the SSF, a fire in the Battery Room or the Electrical Penetration & Switchgear Rooms is not anticipated to impact the site's ability to achieve and maintain safe shutdown.
Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 02 Fire Protection Evaluation for Spare Penetrations Sealed on One Side Only
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at penetrations 733-69.1-7, 2-733-175.0-2, 2-733-179.1-1, 2-733-179.1-2, 2-733-179.1-9, 2-733-179.1-10, 2-733-180.1-3, and 2-733-180.1-4. These penetrations contain seal configurations that do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. Each of these penetrations is located in a NRC committed 3-hour fire barrier. The calculation determined the penetration seals currently installed at the penetrations identified are considered adequate for the hazard. This is due to the following: • Both the Type CSFS Gedney Plug installed at penetration 733-69.1-7 and the single steel conduit cap installed at all remaining penetrations will function as 3 hour F rated penetration seal assemblies • Absence of combustible materials in close proximity to either side of these penetrations Because a fire initiating in any area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, postulated safe shutdown methods will not be adversely impacted for these plant areas.
Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 04 Fire Protection Evaluation For Floor Blockouts With Free Area In Excess of 9 ft. sq. And Structural Framing Spans Exceeding 42 in. Without Cross Member Framing
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the floor blockouts regarding the framing support provided for the Silicone Foam free areas (largest rectangular area of Silicone Foam without penetrating items) exceeding 9 ft. sq. The penetrations are 750-26.0-1, 750-131.0-1, 767-2.0-1, and 767-156.0-2. These penetrations do not conform to typical details E-2 and/or F-5 of DPC 1435.00-00-0006. Each of the penetrations is located in a NRC committed 3-hour fire barrier. The calculation determined the penetrations identified are considered adequate for the area fire hazards, considering: • Area fire detection for FAs 13, 15, 16, 19, 20, 22, and 23 • Partial area automatic fire suppression for FA 13 • Fire Brigade response for FAs 13, 15, 16, 19, 20, 22, and 23

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	Engineering Evaluations
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

- Partial manual suppression (i.e. hose stations, extinguishers) for FAs 13, 15, 16, 19, 20, 22, and 23
- Manually actuated fog/mist sprinkler system for FAs 19 and 20
- Limited combustibles for FAs 13, 15, 16, 19, 20, 22, and 23.

The ability to achieve and maintain safe shutdown is not compromised by the penetration seal and support framing provided for the penetrations of concern.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 06 Fire Protection Evaluation For Pipe Trench Penetrations With A Silicone Foam Buildout Beyond The Barrier Plane
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of 733-69.2-3 and 2-733-127.3-3 penetrations regarding seal configuration. These penetrations are within pipe trenches below the elevation 733' Battery Room area. The penetrations are located in a NRC committed 3-hour fire barrier. The calculation determined penetrations 733-69.2-3 and 2-733-127.3-3 are considered adequate for the hazard and will protect against fire propagation and the development of unacceptable unexposed side temperatures for a 3 hour duration due to limited combustibles and the barrier will not be subjected to direct flame impingement from the surrounding areas. The critical characteristics of asymmetrical orientation, seal material depth, and damming are considered acceptable for these wall blockouts. Therefore, the capability to achieve and maintain safe shutdown is not compromised by these penetrations.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 11 Fire Protection Evaluation For Floor Blockouts With Fiberboard Damming That Is Not Mechanically Secured
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the fire protection adequacy of the floor blockouts identified below regarding their ceramic fiberboard damming configuration: 750-10.0-2 767-11.0-1, -2, -3, -4 767-118.0-1, -2, -3, -4 767-119.0-1, -2, -3, -4 767-12.0-2 767-120.0-1, -2, -3, -4, -5 767-37.0-1, -2, -3, -4, -5 767-38.0-1, -2, -3, -4 767-39.0-1, -2, -3, -4 767-62.0-1, -3, -4 767-65.0-10, -14 767.66.0-1, -2, -3, -4 767-67.0-1, -2, -3, -4, -5 767-90.0-1, -2, -3, -4, -5 767-91.0-2, -3, -4

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	Engineering Evaluations
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

767-92.0-12, -13
767-95.0-1, -3, -4.

Each of these penetration seals is located in a NRC committed fire barrier. Rooms 803A and 805A are identified in the calculation as part of FAs 17 and 18 respectively. These rooms are now in FAs 17A and 18A.

The calculation determined the penetrations identified are adequate for the hazard to protect against fire propagation and the development of unacceptable unexposed side temperatures for a 3-hour duration. Fire propagation between interacting fire areas, through the described non-standard penetration seals identified, will not occur due to the following:

- level of fire resistance provided by the existing penetration seals,
- combustible controls in FAs 13, 17A, 18A, 19, 20, and 24,
- detection in FAs 13, 17A, 18A, 19, 20, and 24,
- fixed water suppression under cable trays at east and west ends of FA 13,
- fog/mist manual suppression system in FAs 19 and 20.

Therefore, the capability to achieve and maintain safe shutdown is not compromised by the penetrations identified.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 12 Fire Protection Evaluation For Unit 1 & 2 Cable Room Cable Shaft Penetrations
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the fire protection adequacy of the Cable Shaft penetrations identified below regarding seal and support framing configuration.

750-29.0-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13
750-100.0-1

Each of these penetrations is located in a NRC committed fire barrier separating the Unit 1 and 2 Cable Rooms from the common Battery Room area.

The calculation determined the Unit 2 Cable Shaft is considered qualified for a 3-hour (F and T) rating, while the Unit 1 Cable Shaft is considered adequate for the area fire hazards, considering

- Area detection
- Manual suppression (i.e. hose stations, fire extinguishers, etc.)
- Manually actuated, fog/mist type sprinkler system
- Partial automatic suppression
- Fire Brigade response.

Therefore, the capability to achieve and maintain safe shutdown is not compromised by the penetrations identified.

Attachment C

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

Fire Area ID: 13 (Unit 1) - Battery Rooms Common
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
(All)	Area Wide	None	None	R, D	Procedures/Recovery Actions: R D
648	Cable Shaft	D	R	None	Detection System, FA 13 Detection: R Water Suppression, FA 13 Suppression: D
701	Battery Room	E, R	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R Water Suppression, FA 13 Suppression: E R
706	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R
707	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R
708	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R
709	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R
710	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R
711	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R

Title Fire Risk Evaluation for Fire Area 13 (Unit 1)

Risk Summary The delta CDF and delta LERF are above the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) but within the acceptance thresholds in RG 1.174. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [Common] 6.30E-07

Δ LERF Units: [Common] 1.06E-07

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. In order to ensure the MCA remains bounding, the suppression systems installed in Room 701, as well as the response by the plant fire brigade is required. Plant fire brigade response is also necessary to support the analytical bases for the HGL analysis. Therefore, the installed detection systems in all areas are required for Risk. The detection system will ensure a timely fire brigade response, including initiation of fire fighting activities. Recovery actions which provide acceptable risk results have been identified. Additional recovery actions have been identified for DID as well as the installed suppression system in Room 648. The analyzed scenarios bound potential fuel packages which can reasonably be expected to occur in this area. The ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

Attachment C

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-001 (PH-13-011)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power and failure of cable 1 EGA 501. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-002 (PH-13-011)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power and failure of cable 1 CF 834. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-005 (PH-13-026)
VFDR	This component, which is normally open, required to be cycled for HSB, is affected by an assumed loss of offsite power. If valve is repowered, a spurious operation can occur due to failure of cable 1 CA 536. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-006 (OP-13-005)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXG is not diesel backed. Either 1CS VA0018 or 1CA VA0004 is required closed to preclude air entrapment concerns. 1CA-4 could spuriously open due to failure of cable 1 CA 536. 1CS-18 could also spuriously open due to failure of cable 1 CA 536. This failure condition may 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.
Component(s)	1CA VA0004 - Unit 1 Auxiliary Feedwater Pumps Suction from Upper Surge Tank Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-007 (OP-13-006)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXC is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 1CA VA0006 could spuriously open due to failure of cable 1 CA 536. This failure condition may 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.
Component(s)	1CA VA0006 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Condensate Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-008 (PH-13-066)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cable 1*CA 596 and 1 CA 536. The CA MOV isolation valve is affected by spurious operation due to failure of cables 1*CA 528, 1*CA 529 or 1*CA 549. A potential IN 92-18 concern exists due to fail of cable 1*CA 549 and either 1*CA 528 or 1*CA 529. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 1D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0036AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1D S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-009 (OE-13-001)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 1*CA 549 and either 1*CA 528 or 1*CA 529. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may 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.
Component(s)	1CA VA0038B - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1D S/G Isolation valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-13-010 (PH-13-066)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cable 1*CA 596. The CA MOV isolation valve is affected by spurious operation due to failure of cables 1*CA 528, 1*CA 529 or 1*CA 549. A potential IN 92-18 concern exists due to fail of cable 1*CA 549 and either1*CA 528 or 1*CA 529. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 1D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0038B - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1D S/G Isolation valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-13-011 (OP-13-033)
VFDR	This component, which is normally open, required open for HSB, is affected by failure of cable 1*CA 596 or 1 CA 536 causing spurious operation. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 1CA VA0050B is required to control level. However, 1CA VA0050B is subject to spurious operation due to failure of cables 1*CA 528 and 1*CA 530. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	1CA VA0048AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1C S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

Attachment C

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-012 (PH-13-070)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cable 1*CA 596 or 1 CA 536. The CA MOV isolation valve is affected by spurious operation due to failure of cables 1*CA 528 and 1*CA 530. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1C to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0048AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1C S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-13-013 (PH-13-070)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cable 1*CA 596 and 1 CA 536. The CA MOV isolation valve is affected by spurious operation due to failure of cables 1*CA 528 and 1*CA 530. The concern is to throttle flow of the TDCA Pump feed to the Steam Generator 1C to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0050B - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1C S/G Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-13-014 (OP-13-032)
VFDR	This component, which is normally open, required open for HSB, is affected by failure of cable 1*CA 596 or 1 CA 536 causing spurious operation. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 1CA VA0054AC is required to control level. However, 1CA VA0054AC is subject to loss of offsite power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	1CA VA0052AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G control valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-015 (PH-13-068)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cable 1*CA 596 or 1 CA 536. The CA MOV isolation valve is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0052AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G control valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-13-016 (PH-13-068)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failures of cable 1*CA 596 or 1 CA 536. The CA MOV isolation valve is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0054AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G isolation valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-13-017 (OP-13-031)
VFDR	This component, which is normally open, required open for HSB, is affected by failure of cable 1*CA 596 or 1 CA 536 causing spurious operation. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 1CA VA0066AC is required to control level. However, 1CA VA0066AC is subject to loss of offsite power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	1CA VA0064AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1A S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-018 (PH-13-069)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failures of cable 1*CA 596 or 1 CA 536. The CA MOV isolation valve is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0064AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1A S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-13-019 (PH-13-069)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failures of cable 1*CA 596 or 1 CA 536. The CA MOV isolation valve is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0066AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G isolation valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-13-020 (PH-13-060)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. The trip of the CF Pumps can not be assured from the control room due to cable failure. Manual actions would be required. However, at least one train of Main Steam isolation from the control room is available if safety 125 VDC is available. If not available, the valves will fail closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF VA0026AB - 1D S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-021 (PH-13-060)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. The trip of the CF Pumps can not be assured from the control room due to cable failure. Manual actions would be required. However, at least one train of Main Steam isolation from the control room is available if safety 125 VDC is available. If not available, the valves will fail closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF VA0028AB - 1C S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-022 (PH-13-060)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. The trip of the CF Pumps can not be assured from the control room due to cable failure. Manual actions would be required. However, at least one train of Main Steam isolation from the control room is available if safety 125 VDC is available. If not available, the valves will fail closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF VA0030AB - 1B S/G Feed water Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-023 (PH-13-060)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. The trip of the CF Pumps can not be assured from the control room due to cable failure. Manual actions would be required. However, at least one train of Main Steam isolation from the control room is available if safety 125 VDC is available. If not available, the valves will fail closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF VA0035AB - 1A S/G Feed water Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-024 (OP-13-005)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXB is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 1CM VA0265 could spuriously open due to failure of cable 1 CA 536. This failure condition may 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.
Component(s)	1CM VA0265 - Unit 1 Hotwell Auxiliary Feedwater Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-025 (OP-13-005)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXG is not diesel backed. Either 1CS VA0018 or 1CA VA0004 is required closed to preclude air entrapment concerns. 1CA-4 could spuriously open due to failure of cable 1 CA 536. 1CS-18 could also spuriously open due to failure of cable 1 CA 536. This failure condition may 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.
Component(s)	1CS VA0018 - Unit 1 Auxiliary Feedwater Pumps Suction from Upper Surge Tank Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-026 (OP-13-048)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of offsite power. Valve 1FW VA0027A is required closed to mitigate FWST drain down to the containment sump (MSO #14). The valve is also required closed for CSD to allow alignment of the ND system to NC loop 3. Valves 1ND-19A and 1FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 1ND-4B, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation of these valves. Valves 1NI-184B, and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore, a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-027 (PH-13-007)
VFDR	This component, which is normally cycled, required off for HSB, is affected by cable failures which can cause loss of control and also a loss of DC control power due to the fire in the battery room. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRA - Backup Pressurizer Heater Group 1A
Disposition	Recovery Action(s) Required to DID: De-energize Pressurizer Heater Groups 1A, 1B, 1C, 1D by opening breakers 1ELXA-5C, 1ELXB-4D, 1LXF-2C, 1LXC-1D, and 1LXG-2C per procedure AP/1/A/5500/24.

VFDR ID	VFDR-13-028 (PH-13-007)
VFDR	This component, which is normally cycled, required off for HSB, is affected by numerous cable failures which can cause spurious operation or loss of control and also a loss of DC control power due to the fire in the battery room. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Recovery Action(s) Required to DID: De-energize Pressurizer Heater Groups 1A, 1B, 1C, 1D by opening breakers 1ELXA-5C, 1ELXB-4D, 1LXF-2C, 1LXC-1D, and 1LXG-2C per procedure AP/1/A/5500/24.

VFDR ID	VFDR-13-029 (PH-13-007)
VFDR	This component, which is normally cycled, required off for HSB, is affected by a loss of DC control power due to the fire in the battery room. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRC - Pressurizer Heater Group 1C
Disposition	Recovery Action(s) Required to DID: De-energize Pressurizer Heater Groups 1A, 1B, 1C, 1D by opening breakers 1ELXA-5C, 1ELXB-4D, 1LXF-2C, 1LXC-1D, and 1LXG-2C per procedure AP/1/A/5500/24.

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-030 (PH-13-007)
VFDR	This component, which is normally cycled, required off for HSB, is affected by failure of cable 1 ILE 707 which can cause spurious operation and also a loss of DC control power due to the fire in the battery room. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRD - Pressurizer Heater Group 1D
Disposition	Recovery Action(s) Required to DID: De-energize Pressurizer Heater Groups 1A, 1B, 1C, 1D by opening breakers 1ELXA-5C, 1ELXB-4D, 1LXF-2C, 1LXC-1D, and 1LXG-2C per procedure AP/1/A/5500/24.

VFDR ID	VFDR-13-031 (PH-13-005)
VFDR	This component, which is normally on, required off for HSB, is affected by the failure of numerous cables which can cause loss of control and also a loss of DC control power due to the fire in the battery room. The trip of the pumps can not be assured from the control room. The possible loss of all seal cooling can occur in this area. The normal charging pumps 1NV PU0015 and 1NV PU0016 are affected by a possible loss of offsite power and a loss DC control power. Valves 1NV-141A, 1NV-142B, 1NV-150B, 1NV-151A, 1NV-221A and 1NV-222B are subject to a possible loss of offsite power and various cable failures. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). This action is required to be performed within 60 minutes to prevent possible SGTR concerns. The NC Pumps can be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0001 - 1A Reactor Coolant Pump
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria.

VFDR ID	VFDR-13-032 (PH-13-005)
VFDR	This component, which is normally on, required off for HSB, is affected by the failure of numerous cables which can cause loss of control and also a loss of DC control power due to the fire in the battery room. The trip of the pumps can not be assured from the control room. The possible loss of all seal cooling can occur in this area. The normal charging pumps 1NV PU0015 and 1NV PU0016 are affected by a possible loss of offsite power and a loss DC control power. Valves 1NV-141A, 1NV-142B, 1NV-150B, 1NV-151A, 1NV-221A and 1NV-222B are subject to a possible loss of offsite power and various cable failures. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). This action is required to be performed within 60 minutes to prevent possible SGTR concerns. The NC Pumps can be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0002 - 1B Reactor Coolant Pump
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria.

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-033 (PH-13-005)
VFDR	This component, which is normally on, required off for HSB, is affected by the failure of numerous cables which can cause loss of control and also a loss of DC control power due to the fire in the battery room. The trip of the pumps can not be assured from the control room. The possible loss of all seal cooling can occur in this area. The normal charging pumps 1NV PU0015 and 1NV PU0016 are affected by a possible loss of offsite power and a loss DC control power. Valves 1NV-141A, 1NV-142B, 1NV-150B, 1NV-151A, 1NV-221A and 1NV-222B are subject to a possible loss of offsite power and various cable failures. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). This action is required to be performed within 60 minutes to prevent possible SGTR concerns. The NC Pumps can be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0003 - 1C Reactor Coolant Pump
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria.

VFDR ID	VFDR-13-034 (PH-13-005)
VFDR	This component, which is normally on, required off for HSB, is affected by the failure of numerous cables which can cause loss of control and also a loss of DC control power due to the fire in the battery room. The trip of the pumps can not be assured from the control room. The possible loss of all seal cooling can occur in this area. The normal charging pumps 1NV PU0015 and 1NV PU0016 are affected by a possible loss of offsite power and a loss DC control power. Valves 1NV-141A, 1NV-142B, 1NV-150B, 1NV-151A, 1NV-221A and 1NV-222B are subject to a possible loss of offsite power and various cable failures. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). This action is required to be performed within 60 minutes to prevent possible SGTR concerns. The NC Pumps can be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0004 - 1D Reactor Coolant Pump
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria.

VFDR ID	VFDR-13-035 (O-13-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to failure of cable 1*NC 534. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area. The respective PORV is subject to spurious operation due to failure of cables 1*NC 534, 1*NC 599 or 1*NC 941 prior to disconnecting plugs at the SSF disconnect enclosure (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0031B - Pressurizer PORV Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-036 (PH-13-006)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cables 1*NC 534, 1*NC 599 or 1*NC 941 prior to transfer to the SSF. The respective NC block valve is affected by spurious operation due to failure of cable 1*NC 534. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0032B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-037 (O-13-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to failure of cable 1*NC 534. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area. The respective PORV is subject to spurious operation due to failure of cables 1*NC 534 or 1*NC 599 prior to disconnecting plugs at the SSF disconnect enclosure (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0035B - Pressurizer PORV Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-038 (PH-13-006)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cables 1*NC 534 or 1*NC 599 prior to transfer to the SSF. The respective NC block valve is affected by spurious operation due to failure of cable 1*NC 534. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0036B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-039 (OP-13-048)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to failure of cable 1*NI 679 and a possible loss of offsite power. Valve 1ND VA0004B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1ND VA0019A or 1ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Valves 1ND-19A and 1FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 1ND-4B, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation of these valves. Valves 1NI-184B, and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore, a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0004B - 1B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-040 (OP-13-048)
VFDR	This component, which is normally open, required closed for HSB, is affected by a possible loss of offsite power. Valve 1ND VA0019A is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1ND VA0019A or 1ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Valves 1ND-19A and 1FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 1ND-4B, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation of these valves. Valves 1NI-184B, and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore, a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0019A - 1A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-041 (OP-13-048)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cables 1*NI 632 or 1*VA 546. Valve 1NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1ND-19A and 1FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 1ND-4B, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation of these valves. Valves 1NI-184B, and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore, a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-042 (OP-13-051)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cables 1*NI 632 or 1*VA 546. Valve 1NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1NI VA0184B, 1NS VA0001B, and 1NS VA0003B may spuriously open due to cable failure. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump via Train B NS system (MSO #14). Valve 1NS VA0018A has no cable failures in Fire Area 13. A loss of power will fail the valve as is to its normally closed position. Therefore, there is no risk of FWST depletion to the containment sump via Train A NS system. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-043 (OP-13-048)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 1*NI 1011. Valve 1NI VA0185A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1ND-19A and 1FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 1ND-4B, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation of these valves. Valves 1NI-184B, and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore, a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Disposition Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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VFDR ID VFDR-13-044 (OP-13-051)

VFDR This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 1*NS 544. Valve 1NS VA0001B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1NI VA0184B, 1NS VA0001B, and 1NS VA0003B may spuriously open due to cable failure. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump via Train B NS system (MSO #14). Valve 1NS VA0018A has no cable failures in Fire Area 13. A loss of power will fail the valve as is to its normally closed position. Therefore, there is no risk of FWST depletion to the containment sump via Train A NS system. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.

Component(s) 1NS VA0001B - 1B Containment Spray Pump Suction from Containment Sump Isolation Valve

Disposition Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID VFDR-13-045 (OP-13-051)

VFDR This component, which is normally open, required closed for HSB, is affected by possible spurious operation from failure of cable 1*NS 544. Valve 1NS VA0003B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1NI VA0184B, 1NS VA0001B, and 1NS VA0003B may spuriously open due to cable failure. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump via Train B NS system (MSO #14). Valve 1NS VA0018A has no cable failures in Fire Area 13. A loss of power will fail the valve as is to its normally closed position. Therefore, there is no risk of FWST depletion to the containment sump via Train A NS system. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.

Component(s) 1NS VA0003B - 1B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve

Disposition Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-048 (OP-13-048)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1ND-19A and 1FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 1ND-4B, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation of these valves. Valves 1NI-184B, and 1NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore, a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-049 (OP-13-051)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NS VA0001B, and 1NS VA0003B may spuriously open due to cable failure. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump via Train B NS system (MSO #14). Valve 1NS VA0018A has no cable failures in Fire Area 13. A loss of power will fail the valve as is to its normally closed position; therefore there is no risk of FWST depletion to the containment sump via Train A NS system. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-050 (PH-13-014)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0083 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0083 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0078 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0078 or 1SM VA0083 is required closed. Valve 1SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0083 - A Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-051 (PH-13-016)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0089 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0089 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0084 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0084 or 1SM VA0089 is required closed. Valve 1SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0089 - B Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-052 (PH-13-017)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0095 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0095 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0090 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0090 or 1SM VA0095 is required closed. Valve 1SM VA0095 s assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0095 - C Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-053 (PH-13-015)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0101 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0101 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0096 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0096 or 1SM VA0101 is required closed. Valve 1SM VA0101 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0101 - D Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-106 (OP-13-055)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of power. Valve 1FW VA0027A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 1FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve 1FW VA0027A may lose power and is required closed to prevent FWST depletion (valve is normally open and fails as is on a loss of power). Valve 1ND VA0004B has cable failures that may cause spurious operation. Valve 1NS VA0038B has a cable failure that may spuriously operate the valve. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-107 (OP-13-055)
VFDR	This component, which is normally off, required off for HSB, is affected by possible spurious operation from failure of cable 1*NV 659 or interlock failure. Pump 1ND PU0002 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 1FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve 1FW VA0027A may lose power and is required closed to prevent FWST depletion (valve is normally open and fails as is on a loss of power). Valve 1ND VA0004B has cable failures that may cause spurious operation. Valve 1NS VA0038B has a cable failure that may spuriously operate the valve. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND PU0002 - 1B Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-108 (OP-13-055)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible spurious operation from failure of cable 1*NI 679 or loss of power. Valve 1ND VA0004B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 1FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve 1FW VA0027A may lose power and is required closed to prevent FWST depletion (valve is normally open and fails as is on a loss of power). Valve 1ND VA0004B has cable failures that may cause spurious operation. Valve 1NS VA0038B has a cable failure that may spuriously operate the valve. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0004B - 1B Residual Heat Removal Suction from FWST or Reactor Coolant Containment Isolation Outside Valve

Attachment C

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

Fire Area ID:	13 (Unit 1) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action
VFDR ID	VFDR-13-109 (OP-13-055)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 1*NS 527. Valve 1NS VA0038B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 1FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve 1FW VA0027A may lose power and is required closed to prevent FWST depletion (valve is normally open and fails as is on a loss of power). Valve 1ND VA0004B has cable failures that may cause spurious operation. Valve 1NS VA0038B has a cable failure that may spuriously operate the valve. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0038B - 1B Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)
VFDR ID	VFDR-13-114 (OP-13-055)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A combination of the ND pump suction valve and 1FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valve 1FW VA0027A may lose power and is required closed to prevent FWST depletion (valve is normally open and fails as is on a loss of power). Valve 1ND VA0004B has cable failures that may cause spurious operation. Valve 1NS VA0038B has a cable failure that may spuriously operate the valve. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to the spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
648	Cable Shaft
701	Battery Room
706	Battery Room
707	Battery Room
708	Battery Room
709	Battery Room
710	Battery Room
711	Battery Room

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring available in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0002, Sect. 9.2.3 Fire Exposure to Unprotected Steel Hangers for HVAC Ducts
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	Supplement No. 2 of The Safety Evaluation Report states, "The applicant has further agreed to provide fire proofed supports for those HVAC ducts in safety related areas to ensure the integrity of the barrier penetration between the duct work, including the damper and the fire barrier." Response to Appendix A to Branch Technical Position 9.5-1 states, "Where Control Area Ventilation System ducts penetrate fire barriers, supports are located within five feet of each penetration on each side of the barrier. In areas where fire loading analysis indicates a need, the supports are fire proofed to a rating equivalent to the damper located in the penetration." This evaluation analyzed the Battery Room; specifically the HVAC ducts penetrating the duct shafts between Col. DD & EE near Col. 54 and Col. 56. The purpose of this calculation is to perform a fire hazards analysis to determine if the pyrocrete currently protecting some HVAC hangers can be removed or abandoned in place without increasing the risk of collapse of the ducts due to fire. The calculation determined the pyrocrete material can be removed or abandoned in place based on the following: • Low in situ and transient combustible loading • Room geometry • Area fire detection • Fire Brigade response. This meets the requirements of the Response to Appendix A to Branch Technical Position 9.5-1, and therefore does not require further analysis.

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.1/6.5.2 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the Battery Room from the Electrical Penetration & Switchgear Rooms. The calculation determined the fire barrier is considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Limited in-situ and transient combustibles • Adjacent fire extinguishers and hose stations • Administrative controls for hot work and combustible loading • Area fire detection

- Fire brigade response
- Penetration seal construction.

Due to the conditions identified above and the presence of the SSF, a fire in the Battery Room or the Electrical Penetration & Switchgear Rooms is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 02 Fire Protection Evaluation for Spare Penetrations Sealed on One Side Only
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at penetrations 733-69.1-7, 2-733-175.0-2, 2-733-179.1-1, 2-733-179.1-2, 2-733-179.1-9, 2-733-179.1-10, 2-733-180.1-3, and 2-733-180.1-4. These penetrations contain seal configurations that do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. Each of these penetrations is located *in a NRC committed 3-hour fire barrier.*

The calculation determined the penetration seals currently installed at the penetrations identified are considered adequate for the hazard. This is due to the following:

- Both the Type CSFS Gedney Plug installed at penetration 733-69.1-7 and the single steel conduit cap installed at all remaining penetrations will function as 3 hour F rated penetration seal assemblies
- Absence of combustible materials in close proximity to either side of these penetrations

Because a fire initiating in any area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, postulated safe shutdown methods will not be adversely impacted for these plant areas.

Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 04 Fire Protection Evaluation For Floor Blockouts With Free Area In Excess of 9 ft. sq. And Structural Framing Spans Exceeding 42 in. Without Cross Member Framing
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the floor blockouts regarding the framing support provided for the Silicone Foam free areas (largest rectangular area of Silicone Foam without penetrating items) exceeding 9 ft. sq. The penetrations are 750-26.0-1, 750-131.0-1, 767-2.0-1, and 767-156.0-2. These penetrations do not conform to typical details E-2 and/or F-5 of DPC 1435.00-00-0006. Each of the penetrations is located in a NRC committed 3-hour fire barrier.

The calculation determined the penetrations identified are considered adequate for the area fire hazards, considering:

- Area fire detection for FAs 13, 15, 16, 19, 20, 22, and 23
- Partial area automatic fire suppression for FA 13
- Fire Brigade response for FAs 13, 15, 16, 19, 20, 22, and 23

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	Engineering Evaluations
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

- Partial manual suppression (i.e. hose stations, extinguishers) for FAs 13, 15, 16, 19, 20, 22, and 23
- Manually actuated fog/mist sprinkler system for FAs 19 and 20
- Limited combustibles for FAs 13, 15, 16, 19, 20, 22, and 23.

The ability to achieve and maintain safe shutdown is not compromised by the penetration seal and support framing provided for the penetrations of concern.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 06 Fire Protection Evaluation For Pipe Trench Penetrations With A Silicone Foam Buildout Beyond The Barrier Plane
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of 733-69.2-3 and 2-733-127.3-3 penetrations regarding seal configuration. These penetrations are within pipe trenches below the elevation 733' Battery Room area. The penetrations are located in a NRC committed 3-hour fire barrier. The calculation determined penetrations 733-69.2-3 and 2-733-127.3-3 are considered adequate for the hazard and will protect against fire propagation and the development of unacceptable unexposed side temperatures for a 3 hour duration due to limited combustibles and the barrier will not be subjected to direct flame impingement from the surrounding areas. The critical characteristics of asymmetrical orientation, seal material depth, and damming are considered acceptable for these wall blockouts. Therefore, the capability to achieve and maintain safe shutdown is not compromised by these penetrations.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 11 Fire Protection Evaluation For Floor Blockouts With Fiberboard Damming That Is Not Mechanically Secured
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the fire protection adequacy of the floor blockouts identified below regarding their ceramic fiberboard damming configuration: 750-10.0-2 767-11.0-1, -2, -3, -4 767-118.0-1, -2, -3, -4 767-119.0-1, -2, -3, -4 767-12.0-2 767-120.0-1, -2, -3, -4, -5 767-37.0-1, -2, -3, -4, -5 767-38.0-1, -2, -3, -4 767-39.0-1, -2, -3, -4 767-62.0-1, -3, -4 767-65.0-10, -14 767.66.0-1, -2, -3, -4 767-67.0-1, -2, -3, -4, -5 767-90.0-1, -2, -3, -4, -5 767-91.0-2, -3, -4

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	Engineering Evaluations
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

767-92.0-12, -13
767-95.0-1, -3, -4.

Each of these penetration seals is located in a NRC committed fire barrier. Rooms 803A and 805A are identified in the calculation as part of FAs 17 and 18 respectively. These rooms are now in FAs 17A and 18A.

The calculation determined the penetrations identified are adequate for the hazard to protect against fire propagation and the development of unacceptable unexposed side temperatures for a 3-hour duration. Fire propagation between interacting fire areas, through the described non-standard penetration seals identified, will not occur due to the following:

- level of fire resistance provided by the existing penetration seals,
- combustible controls in FAs 13, 17A, 18A, 19, 20, and 24,
- detection in FAs 13, 17A, 18A, 19, 20, and 24,
- fixed water suppression under cable trays at east and west ends of FA 13,
- fog/mist manual suppression system in FAs 19 and 20.

Therefore, the capability to achieve and maintain safe shutdown is not compromised by the penetrations identified.

Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 12 Fire Protection Evaluation For Unit 1 & 2 Cable Room Cable Shaft Penetrations
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the fire protection adequacy of the Cable Shaft penetrations identified below regarding seal and support framing configuration.

750-29.0-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13
750-100.0-1

Each of these penetrations is located in a NRC committed fire barrier separating the Unit 1 and 2 Cable Rooms from the common Battery Room area.

The calculation determined the Unit 2 Cable Shaft is considered qualified for a 3-hour (F and T) rating, while the Unit 1 Cable Shaft is considered adequate for the area fire hazards, considering

- Area detection
- Manual suppression (i.e. hose stations, fire extinguishers, etc.)
- Manually actuated, fog/mist type sprinkler system
- Partial automatic suppression
- Fire Brigade response.

Therefore, the capability to achieve and maintain safe shutdown is not compromised by the penetrations identified.

Attachment C

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

Fire Area ID: 13 (Unit 2) - Battery Rooms Common
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
(All)	Area Wide	None	None	R, D	Procedures/Recovery Actions: R D
648	Cable Shaft	D	R	None	Detection System, FA 13 Detection: R Water Suppression, FA 13 Suppression: D
701	Battery Room	E, R	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R Water Suppression, FA 13 Suppression: E R
706	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R
707	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R
708	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R
709	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R
710	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R
711	Battery Room	None	E, R	E	Combustible Control: E Detection System, FA 13 Detection: E R

Title	Fire Risk Evaluation for Fire Area 13 (Unit 2)
Risk Summary	The delta CDF and delta LERF are above the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) but within the acceptance thresholds in RG 1.174. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.
Δ CDF	Units: [Common] 8.30E-07
Δ LERF	Units: [Common] 1.65E-07
DID Maintained	A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. In order to ensure the MCA remains bounding, the suppression systems installed in Room 701, as well as the response by the plant fire brigade is required. Plant fire brigade response is also necessary to support the analytical bases for the HGL analysis. Therefore, the installed detection systems in all areas are required for Risk. The detection system will ensure a timely fire brigade response, including initiation of fire fighting activities. Recovery actions which provide acceptable risk results have been identified. Additional recovery actions have been identified for DID as well as the installed suppression system in Room 648. The analyzed scenarios bound potential fuel packages which can reasonably be expected to occur in this area. The ability to meet nuclear safety performance criteria is ensured.
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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-054 (PH-13-012)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power and failure of cable 2 CF 811. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-055 (PH-13-012)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power and failure of cable 2 CF 814. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-058 (PH-13-027)
VFDR	This component, which is normally open, required to be cycled for HSB, is affected by an assumed loss of offsite power. If valve is repowered, a spurious operation can occur due to failure of cable 2 CA 586. Power supply 2EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-059 (PH-13-067)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cable 2*CA 596, 2 CA 586 or 2*CA 662. The CA MOV isolation valve is affected by spurious operation due to failure of cables 2*CA 527, 2*CA 528 or 2*CA 642. A potential IN 92-18 concern exists due to fail of cable 2*CA 527 and either 2*CA 528 or 2*CA 642. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 2D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0036AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-13-060 (OE-13-002)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 2*CA 527 and either 2*CA 528 or 2*CA 642. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may 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.
Component(s)	2CA VA0038B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-13-061 (PH-13-067)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cable 2*CA 596, 2 CA 586 or 2*CA 662. The CA MOV isolation valve is affected by spurious operation due to failure of cables 2*CA 527, 2*CA 528 or 2*CA 642. A potential IN 92-18 concern exists due to fail of cable 2*CA 528 or 2*CA 642 and 2*CA 527. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 2D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0038B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-062 (OP-13-035)
VFDR	This component, which is normally open, required open for HSB, is affected by failure of cables 2*CA 596, 2 CA 586 or 2*CA 662 causing spurious operation. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 2CA VA0050B is required to control level. However, 2CA VA0050B is subject to spurious operation due to failure of cables 2*CA 528 and 2*CA 642. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	2CA VA0048AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-13-063 (PH-13-071)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 596, 2 CA 586 or 2*CA 662. The CA MOV isolation valve is affected by spurious operation due to failure of cables 2*CA 528 and 2*CA 642. The concern is to throttle flow of the TDCA Pump feed to the Steam Generator 2C to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0048AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-13-064 (PH-13-071)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 596, 2 CA 586 and 2*CA 662. The CA MOV isolation valve is affected by spurious operation due to failure of cables 2*CA 528 and 2*CA 642. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2C to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0050B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-065 (OP-13-034)
VFDR	This component, which is normally open, required open for HSB, is affected by failure of cables 2*CA 596, 2 CA 586 or 2*CA 662 causing spurious operation. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 2CA VA0054AC is required to control level. However, 2CA VA0054AC is subject to loss of offsite power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	2CA VA0052AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-13-066 (PH-13-072)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 596, 2 CA 586 or 2*CA 662. The CA MOV isolation valve is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0052AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-13-067 (PH-13-072)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 596, 2 CA 586 or 2*CA 662. The CA MOV isolation valve is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0054AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

Attachment C

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-068 (OP-13-030)
VFDR	This component, which is normally open, required open for HSB, is affected by failure of cables 2*CA 596, 2 CA 586 or 2*CA 662 causing spurious operation. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 2CA VA0066AC is required to control level. However, 2CA VA0066AC is subject to loss of offsite power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	2CA VA0064AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-13-069 (PH-13-073)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failures of cable 2*CA 596, 2 CA 586 or 2*CA 662. The CA MOV isolation valve is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0064AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-13-070 (PH-13-073)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failures of cable 2*CA 596, 2 CA 586 or 2*CA 662. The CA MOV isolation valve is affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0066AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-071 (PH-13-065)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. The trip of the CF Pumps can not be assured from the control room due to cable failure. Manual actions would be required. However, at least one train of Main Steam isolation from the control room is available if safety 125 VDC is available. If not available, the valves will fail closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF VA0026AB - 2D S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-072 (PH-13-065)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. The trip of the CF Pumps can not be assured from the control room due to cable failure. Manual actions would be required. However, at least one train of Main Steam isolation from the control room is available if safety 125 VDC is available. If not available, the valves will fail closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF VA0028AB - 2C S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-073 (PH-13-065)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. The trip of the CF Pumps can not be assured from the control room due to cable failure. Manual actions would be required. However, at least one train of Main Steam isolation from the control room is available if safety 125 VDC is available. If not available, the valves will fail closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF VA0030AB - 2B S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-074 (PH-13-065)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. The trip of the CF Pumps can not be assured from the control room due to cable failure. Manual actions would be required. However, at least one train of Main Steam isolation from the control room is available if safety 125 VDC is available. If not available, the valves will fail closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF VA0035AB - 2A S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-075 (OP-13-050)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of offsite power. Valve 2FW VA0027A is required closed to mitigate FWST drain down to the containment sump (MSO #14). The valve is also required closed for CSD to allow alignment of the ND system to NC loop 3. Valves 2ND-19A and 2FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 2ND-4B, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation of these valves. Valves 2NI-184B, and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore. A spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-076 (PH-13-028)
VFDR	This component, which is normally cycled, required off for HSB, is affected by cable failures which can cause loss of control and also a loss of DC control power due to the fire in the battery room. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRA - Backup Pressurizer Heater Group 2A
Disposition	Recovery Action(s) Required to Satisfy DID: De-energize Pressurizer Heater Groups 2A, 2B, 2C, 2D by opening breakers 2ELXA-5C, 2ELXB-4D, 2LXF-4C, 2LXC-5D and 2LXG-4C and per procedure AP/2/A/5500/24.

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-077 (PH-13-028)
VFDR	This component, which is normally cycled, required off for HSB, is affected by numerous cable failures which can cause spurious operation or loss of control and also a loss of DC control power due to the fire in the battery room. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B
Disposition	Recovery Action(s) Required to Satisfy DID: De-energize Pressurizer Heater Groups 2A, 2B, 2C, 2D by opening breakers 2ELXA-5C, 2ELXB-4D, 2LXF-4C, 2LXC-5D and 2LXG-4C and per procedure AP/2/A/5500/24.

VFDR ID	VFDR-13-078 (PH-13-028)
VFDR	This component, which is normally cycled, required off for HSB, is affected by a loss of DC control power due to the fire in the battery room. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRC - Pressurizer Heater Group 2C
Disposition	Recovery Action(s) Required to Satisfy DID: De-energize Pressurizer Heater Groups 2A, 2B, 2C, 2D by opening breakers 2ELXA-5C, 2ELXB-4D, 2LXF-4C, 2LXC-5D and 2LXG-4C and per procedure AP/2/A/5500/24.

VFDR ID	VFDR-13-079 (PH-13-028)
VFDR	This component, which is normally cycled, required off for HSB, is affected by failure of cables 2ILE 707, 2ILE 708 or 2ILE 711 which can cause spurious operation and also a loss of DC control power due to the fire in the battery room. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRD - Pressurizer Heater Group 2D
Disposition	Recovery Action(s) Required to Satisfy DID: De-energize Pressurizer Heater Groups 2A, 2B, 2C, 2D by opening breakers 2ELXA-5C, 2ELXB-4D, 2LXF-4C, 2LXC-5D and 2LXG-4C and per procedure AP/2/A/5500/24.

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-080 (PH-13-025)
VFDR	This component, which is normally on, required off for HSB, is affected by the failure of numerous cables which can cause loss of control and also a loss of DC control power due to the fire in the battery room. The trip of the pumps can not be assured from the control room. The possible loss of all seal cooling can occur in this area. The normal charging pumps 2NV PU0015 and 2NV PU0016 are affected by a possible loss of offsite power and a loss DC control power. Valves 2NV-141A, 2NV-142B, 2NV-150B, 2NV-151A, 2NV-221A and 2NV-222B are subject to a possible loss of offsite power and various cable failures. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). This action is required to be performed within 60 minutes to prevent possible SGTR concerns. The NC Pumps can be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0001 - 2A Reactor Coolant Pump
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria

VFDR ID	VFDR-13-081 (PH-13-025)
VFDR	This component, which is normally on, required off for HSB, is affected by the failure of numerous cables which can cause loss of control and also a loss of DC control power due to the fire in the battery room. The trip of the pumps can not be assured from the control room. The possible loss of all seal cooling can occur in this area. The normal charging pumps 2NV PU0015 and 2NV PU0016 are affected by a possible loss of offsite power and a loss DC control power. Valves 2NV-141A, 2NV-142B, 2NV-150B, 2NV-151A, 2NV-221A and 2NV-222B are subject to a possible loss of offsite power and various cable failures. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). This action is required to be performed within 60 minutes to prevent possible SGTR concerns. The NC Pumps can be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0002 - 2B Reactor Coolant Pump
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria.

VFDR ID	VFDR-13-082 (PH-13-025)
VFDR	This component, which is normally on, required off for HSB, is affected by the failure of numerous cables which can cause loss of control and also a loss of DC control power due to the fire in the battery room. The trip of the pumps can not be assured from the control room. The possible loss of all seal cooling can occur in this area. The normal charging pumps 2NV PU0015 and 2NV PU0016 are affected by a possible loss of offsite power and a loss DC control power. Valves 2NV-141A, 2NV-142B, 2NV-150B, 2NV-151A, 2NV-221A and 2NV-222B are subject to a possible loss of offsite power and various cable failures. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). This action is required to be performed within 60 minutes to prevent possible SGTR concerns. The NC Pumps can be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0003 - 2C Reactor Coolant Pump
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria.

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-083 (PH-13-025)
VFDR	This component, which is normally on, required off for HSB, is affected by the failure of numerous cables which can cause loss of control and also a loss of DC control power due to the fire in the battery room. The trip of the pumps can not be assured from the control room. The possible loss of all seal cooling can occur in this area. The normal charging pumps 2NV PU0015 and 2NV PU0016 are affected by a possible loss of offsite power and a loss DC control power. Valves 2NV-141A, 2NV-142B, 2NV-150B, 2NV-151A, 2NV-221A and 2NV-222B are subject to a possible loss of offsite power and various cable failures. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). This action is required to be performed within 60 minutes to prevent possible SGTR concerns. The NC Pumps can be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0004 - 2D Reactor Coolant Pump
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria

VFDR ID	VFDR-13-084 (O-13-035)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to failure of cables 2*NC 761, 2*NC 776 or 2*NC 780. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area. The respective PORV is subject to spurious operation due to failure of cables 2*NC 780, 2*NC 783 or 2*NC 798 prior to disconnecting plugs at the SSF disconnect enclosure (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0031B - Pressurizer PORV Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-085 (PH-13-030)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cables 2*NC 780, 2*NC 783 or 2*NC 798 prior to transfer to the SSF. The respective NC block valve is affected by spurious operation due to failure of cables 2*NC 761, 2*NC 776 or 2*NC 780. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0032B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-086 (O-13-035)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to failure of cables 2*NC 761, 2*NC 776 or 2*NC 780. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area. The respective PORV is subject to spurious operation due to failure of cables 2*NC 780, 2*NC 783 or 2*NC 798 prior to disconnecting plugs at the SSF disconnect enclosure (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0035B - Pressurizer PORV Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-087 (PH-13-030)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cables 2*NC 780, 2*NC 783 or 2*NC 798 prior to transfer to the SSF. The respective NC block valve is affected by spurious operation due to failure of cables 2*NC 761, 2*NC 776 or 2*NC 780. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0036B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-088 (OP-13-050)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to failure of cable 2*MTC 4 and a possible loss of offsite power. Valve 2ND VA0004B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (2ND VA0019A or 2ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Valves 2ND-19A and 2FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 2ND-4B, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation of these valves. Valves 2NI-184B, and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore, a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0004B - 2B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-089 (OP-13-050)
VFDR	This component, which is normally open, required closed for HSB, is affected by a possible loss of offsite power. Valve 2ND VA0004B is required closed to mitigate FWST drain down to the containment sump. (MSO #14). One of the valves (2ND VA0019A or 2ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Valves 2ND-19A and 2FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 2ND-4B, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation of these valves. Valves 2NI-184B, and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore, a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0019A - 2A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-090 (OP-13-050)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cables 2*ATC 301, 2*FW 541, 2*FW 561 or 2*NI 918. Valve 2NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2ND-19A and 2FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 2ND-4B, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation of these valves. Valves 2NI-184B, and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore, a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-091 (OP-13-052)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cables 2*ATC 301, 2*FW 541, 2*FW 561 or 2*NI 918. Valve 2NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2NI VA0184B, 2NS VA0001B, and 2NS VA0003B may spuriously open due to cable failure. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump via Train B NS system (MSO #14). Valve 2NS VA0018A has no cable failures in Fire Area 13. A loss of power will fail the valve as is to its normally closed position. Therefore, there is no risk of FWST depletion to the containment sump via Train A NS system. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-092 (OP-13-050)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cables 2*FW 541 or 2*FW 561. Valve 2NI VA0185A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2ND-19A and 2FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 2ND-4B, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation of these valves. Valves 2NI-184B, and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-093 (OP-13-052)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 2*NS 544. Valve 2NS VA0001B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2NI VA0184B, 2NS VA0001B, and 2NS VA0003B may spuriously open due to cable failure. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump via Train B NS system (MSO #14). Valve 2NS VA0018A has no cable failures in Fire Area 13. A loss of power will fail the valve as is to its normally closed position. Therefore, there is no risk of FWST depletion to the containment sump via Train A NS system. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0001B - 2B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-094 (OP-13-052)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible spurious operation from failure of cable 2*NS 544. Valve 2NS VA0003B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2NI VA0184B, 2NS VA0001B, and 2NS VA0003B may spuriously open due to cable failure. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump via Train B NS system (MSO #14). Valve 2NS VA0018A has no cable failures in Fire Area 13. A loss of power will fail the valve as is to its normally closed position. Therefore, there is no risk of FWST depletion to the containment sump via Train A NS system. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0003B - 2B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-097 (OP-13-050)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2ND-19A and 2FW-27A may lose power and are required closed to prevent FWST depletion (valves are normally open and fail as is on a loss of power). Valves 2ND-4B, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation of these valves. Valves 2NI-184B, and 2NI-185A may spuriously open due to a two out of three low level signal from FWST level instrumentation (FW LT5000, FW LT5010 and FW LT5020) combined with a Safety Injection Signal (Ss). FW LT5010 and FW LT5020 are affected by a fire in this areas. Therefore, a spurious Safety Injection Signal could cause the valves to open. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-098 (OP-13-052)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NS VA0001B, and 2NS VA0003B may spuriously open due to cable failure. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump via Train B NS system (MSO #14). Valve 2NS VA0018A has no cable failures in Fire Area 13. A loss of power will fail the valve as is to its normally closed position. Therefore, there is no risk of FWST depletion to the containment sump via Train A NS system. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-099 (OP-13-029)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0205 - 2C Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-100 (OP-13-029)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0206 - 2B Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-101 (OP-13-029)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0207 - 2A Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-102 (PH-13-035)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0083 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0083 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0078 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0078 or 2SM VA0083 is required closed. Valve 2SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0083 - A Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-103 (PH-13-037)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0089 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0089 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0084 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0084 or 2SM VA0089 is required closed. Valve 2SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0089 - B Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-104 (PH-13-038)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0095 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0095 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0090 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0090 or 2SM VA0095 is required closed. Valve 2SM VA0095 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0095 - C Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-105 (PH-13-036)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0101 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0101 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0096 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0096 or 2SM VA0101 is required closed. Valve 2SM VA0101 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0101 - D Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-110 (OP-13-056)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of power. Valve 2FW VA0027A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 2FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve 2FW VA0027A may lose power and is required closed to prevent FWST depletion (valve is normally open and fails as is on a loss of power). Valve 2ND VA0004B has cable failures that may cause spurious operation. Valve 2NS VA0038B has a cable failure that may spuriously operate the valve. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-13-111 (OP-13-056)
VFDR	This component, which is normally off, required off for HSB, is affected by possible spurious operation from failure of cable 2*KC 614 or interlock failure. Pump 2ND PU0002 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 2FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve 2FW VA0027A may lose power and is required closed to prevent FWST depletion (valve is normally open and fails as is on a loss of power). Valve 2ND VA0004B has cable failures that may cause spurious operation. Valve 2NS VA0038B has a cable failure that may spuriously operate the valve. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND PU0002 - 2B Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-112 (OP-13-056)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible spurious operation from failure of cable 2*MTC 4 or loss of power. Valve 2ND VA0004B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 2FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve 2FW VA0027A may lose power and is required closed to prevent FWST depletion (valve is normally open and fails as is on a loss of power). Valve 2ND VA0004B has cable failures that may cause spurious operation. Valve 2NS VA0038B has a cable failure that may spuriously operate the valve. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0004B - 2B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-13-113 (OP-13-056)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 2*ATC 408. Valve 2NS VA0038B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 2FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve 2FW VA0027A may lose power and is required closed to prevent FWST depletion (valve is normally open and fails as is on a loss of power). Valve 2ND VA0004B has cable failures that may cause spurious operation. Valve 2NS VA0038B has a cable failure that may spuriously operate the valve. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0038B - 2B Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve

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

Fire Area ID:	13 (Unit 2) - Battery Rooms Common	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-13-115 (OP-13-056)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A combination of the ND pump suction valve and 2FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve 2FW VA0027A may lose power and is required closed to prevent FWST depletion (valve is normally open and fails as is on a loss of power). Valve 2ND VA0004B has cable failures that may cause spurious operation. Valve 2NS VA0038B has a cable failure that may spuriously operate the valve. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
717	Cable Tray Access
718	Stairway
719	Inst Comp Air Tank
719A	Boronometer room
720	Stm Gen Blowdown HX
721	Seal Water HX
722	600v MCC, 1EMXB, 1EMXB-1, 1EMXB-2, 1EMXB-3
723	Corridor, Component Cooling Pumps
723A	600v MCC 2EMXH
724	600v MCC, 2EMXB, 2EMXB-1, 2EMXB-2, 2EMXB-3
725	Seal Water HX
726	Inst Comp Air Tank
726A	Boronometer Room
727	Stm Gen Blowdown HX
728	Volume Control Tank
729	RC Filters
730	Boron Inj Tank, Boron Inj Recirc Pumps
731	Corridor
731A	Stairway
732	RHR HX, Cont Spray HX
733	RHR HX, Cont Spray HX
734	Fuel Pool Skimming Filter
735	Fuel Pool Cooling Pre-Filter
736	Fuel Pool Cooling Post Filter
737	Boric Acid Tank, Trans Pumps and Filter
738	SG Blowdown Recycle Demin Effluent Filter, Seal Water Filter
739	Seal Water Inj. Filter
740	SG Blowdown Recycle Demin Effluent Filter, Seal Water Inj. Filter
741	Spent Resin Sluice Filter
742	Mixed Bed Demin
743	Cation Bed Demin
744	Cation Bed Demin
745	Thermal Regeneration Demin 1C
746	Thermal Regeneration Demin 1B
747	Thermal Regeneration Demin 1A
748	Boric Acid Tank, Trans Pumps and Filter
749	SG Blowdown Demin 1B
750	Stm. Gen. Blowdown Demin 1A
751	Thermal Regeneration Demin 1E

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
752	Thermal Regeneration Demin 1D
753	Waste Monitor Tank Filter
754	Waste Monitor Tank Demin
755	Laundry & Hot Shower Tank Carbon Filter
756	Laundry & Hot Shower Tank Primary Filter
757	Floor Drain Tank Filter
758	Corridor
759	Stairway Lobby
759A	Stairway
760	Recycle Evap Cond Filter
761	Recycle Evap Cond Demin
762	Recycle Evap Feed Demin
763	Recycle Evap Filter
764	Recycle Evap Feed Filter
765	Recycle Evap Feed Demin
766	Waste Evap Cond Filter
767	Waste Evap Cond Demin
768	Thermal Regeneration Demin
769	Thermal Regeneration Demin
770	Thermal Regeneration Demin
771	Thermal Regeneration Demin
772	Thermal Regeneration Demin
773	Recycle Holdup Tank A
774	Mixed Bed Demin
775	Mixed Bed Demin
776	Cation Bed Demin
777	Waste Evap Feed Filters
778	Recycle Holdup Tank B
779	Seal Water Inj. Filter
780	Seal Water Inj. Filter
781	Seal Water Inj. Filter
782	Fuel Pool Cooling Post Filter
783	Fuel Pool Cooling Pre-Filter
784	Fuel Pool Skimming Filter
785	RHR HX 2A, Cont Spray HX2A
786	RHR HX 2B, Cont Spray HX2B
787	Corridor
787A	Stairway
788	Boron Inj Tank, Boron Inj Recirc Pumps

Fire Area ID: 14 (Unit 1) - Aux Building Common El 733 — **Fire Area Definition**
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description
789	RC Filters
790	Volume Control Tank

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring available in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action 02. Auxiliary Building 10 CFR50 Appendix R III.G.2.c Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the unprotected steel supports penetrating the fire rated barriers separating redundant safe shutdown system components (pumps) as required by Section III.G.2.c of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- Low combustible loading in area.
- Fire detection is installed over the pumps.
- Automatic suppression is installed over the pumps.
- Manual suppression (portable extinguishers and hose stations) is available for fire brigade response.

The areas affected by the deviation are in the auxiliary building on elevations 716 and 733 feet. Fire areas affected include 2, 2A, 3, 3A, 4, and 14. The walls, floors, and ceilings of these fire areas are of reinforced concrete construction and provide 3-hour fire rated barriers. Mechanical and electrical penetrations in rated barriers are sealed with an approved 3-hour silicone foam seal or have been qualified by a fire test. HVAC ducts are provided with 1-1/2-hour UL fire rated dampers.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Licensing Action 03. Auxiliary Building Expansion Joint Deviation

Licensing Basis

Deviation request per the 8/3/1984 Duke letter to the NRC provides the following justification for the cork seismic expansion joints provided in the 3 hour fire rated floor and wall assemblies as required by Section III.G.2.a of App R, which was approved by the NRC in a letter dated 5/15/1989.

- Predominant combustible in the area is cable insulation.
- Fire detectors are installed on either side of the seismic gaps.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The floors, walls, and ceilings are 12 to 24 inches thick.
- The limited exposed area of the cork.
- The burning characteristics of the cork.
- The combustibles are not installed directly at the seismic gaps.
- In the event a fire develops and transmits heat through the gaps and damages safe shutdown cables, the safe shutdown system is available and is independent of the areas involved.

The NRC approved Duke's deviation request in a letter dated 5/15/1989.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.4 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the redundant KC, NV, RN, and ND pumps. The calculation determined the fire barriers are considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Limited in-situ and transient combustibles • Area fixed automatic sprinkler systems • Administrative controls for hot work and combustible loading • Area fire detection • Fire brigade response • Penetration seal construction. Due to the conditions identified above and the presence of the SSF, a fire in these areas is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 05 Fire Protection Evaluation For Over Sized Pipe Penetration
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at ten (10) penetrations (716-16.1-12, 716-16.1-13, 2-716-108.1-6, 733-92.1-1, 733-92.1-2, 750-21.2-1, 750-35.1-1, 750-35.1-2, 750-35.1-3, and 750-178.1-10). These seal configurations do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. In each case, the pipe size and opening size exceeds the limitation of the associated typical detail design. Each of these penetrations is located in a NRC committed fire barrier. The calculation determined the penetration seals currently installed at penetrations identified are adequate for the hazard. In all cases the present seal configuration has been demonstrated as capable of providing a 3 hour F rating. Furthermore, applications in 1-1/2 hour rated barriers do not present realistic T rating concerns, due to the location of the seals and the fact that the 1-1/2 hour rated barriers are partial length walls (i.e., they do not provide complete separation of adjacent areas). Applications in 3 hour rated barriers do not result in T rating concerns due to the minimal increase in pipe size (12" actual vs. 10" qualified by test) and the fact that no exposed combustible materials are in contact with or adjacent to these penetrations. Therefore, a fire initiating in one area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, and postulated safe shutdown methods will not be adversely impacted for these plant areas.

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0014, Att. 07 GL 86-10 Evaluation of Unrated fire barrier open grating locations at Auxiliary Building elevation 733' (FA 4 to FA 14)
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two open floor gratings in the Auxiliary Building (AB) barrier at elevation 733' separating Fire Areas (FAs) 4 and 14. The calculation determined the barrier to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • the combustible controls, • automatic detection, • presence of well distributed manual fire suppression capability in the vicinity of the rooms containing the open grating, • use of SSS for safe shutdown, • the floor-ceiling height providing sufficient room volume for hot gas layer dispersion, • the fire brigade response. The following open item was identified during this evaluation: 1. NSD-313 needs to be revised to identify rooms 602, 603, 646, 647, 730, and 788 as Exclusion Areas for transient combustibles during all modes.

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

Fire Area ID: 14 (Unit 1) - Aux Building Common El 733
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
(All)	Area Wide	None	None	R, D	Modifications: D Procedures/Recovery Actions: R
717	Cable Tray Access	None	None	None	None
718	Stairway	None	None	None	None
719	Inst Comp Air Tank	None	None	None	None
719A	Boronometer room	None	None	None	None
720	Stm Gen Blowdown HX	None	None	None	None
721	Seal Water HX	None	None	None	None
722	600v MCC, 1EMXB, 1EMXB-1, 1EMXB-2, 1EMXB-3	None	D	None	Detection System, FA 14 Detection: D
723	Corridor, Component Cooling Pumps	E	E	E	Combustible Control: E Detection System, FA 14 Detection: E Water Suppression, FA 14 Suppression: E
723A	600v MCC 2EMXH	None	None	None	None
724	600v MCC, 2EMXB, 2EMXB-1, 2EMXB-2, 2EMXB-3	None	None	None	None
725	Seal Water HX	None	None	None	None
726	Inst Comp Air Tank	None	None	None	None
726A	Boronometer Room	None	None	None	None
727	Stm Gen Blowdown HX	None	None	None	None
728	Volume Control Tank	None	None	None	None
729	RC Filters	None	None	None	None
730	Boron Inj Tank, Boron Inj Recirc Pumps	None	E	E	Combustible Control: E Detection System, FA 14 Detection: E
731	Corridor	None	None	None	None
731A	Stairway	None	None	None	None
732	RHR HX, Cont Spray HX	None	None	None	None
733	RHR HX, Cont Spray HX	None	None	None	None
734	Fuel Pool Skimming Filter	None	None	None	None
735	Fuel Pool Cooling Pre-Filter	None	None	None	None
736	Fuel Pool Cooling Post Filter	None	None	None	None
737	Boric Acid Tank, Trans Pumps and Filter	None	None	None	None
738	SG Blowdown Recycle Demin Effluent Filter, Seal Water Filter	None	None	None	None
739	Seal Water Inj. Filter	None	None	None	None
740	SG Blowdown Recycle Demin Effluent Filter, Seal Water Inj. Filter	None	None	None	None

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

Fire Area ID: 14 (Unit 1) - Aux Building Common El 733
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
741	Spent Resin Sluice Filter	None	None	None	None
742	Mixed Bed Demin	None	None	None	None
743	Cation Bed Demin	None	None	None	None
744	Cation Bed Demin	None	None	None	None
745	Thermal Regeneration Demin 1C	None	None	None	None
746	Thermal Regeneration Demin 1B	None	None	None	None
747	Thermal Regeneration Demin 1A	None	None	None	None
748	Boric Acid Tank, Trans Pumps and Filter	None	None	None	None
749	SG Blowdown Demin 1B	None	None	None	None
750	Stm. Gen. Blowdown Demin 1A	None	None	None	None
751	Thermal Regeneration Demin 1E	None	None	None	None
752	Thermal Regeneration Demin 1D	None	None	None	None
753	Waste Monitor Tank Filter	None	None	None	None
754	Waste Monitor Tank Demin	None	None	None	None
755	Laundry & Hot Shower Tank Carbon Filter	None	None	None	None
756	Laundry & Hot Shower Tank Primary Filter	None	None	None	None
757	Floor Drain Tank Filter	None	None	None	None
758	Corridor	None	None	None	None
759	Stairway Lobby	None	None	None	None
759A	Stairway	None	None	None	None
760	Recycle Evap Cond Filter	None	None	None	None
761	Recycle Evap Cond Demin	None	None	None	None
762	Recycle Evap Feed Demin	None	None	None	None
763	Recycle Evap Filter	None	None	None	None
764	Recycle Evap Feed Filter	None	None	None	None
765	Recycle Evap Feed Demin	None	None	None	None
766	Waste Evap Cond Filter	None	None	None	None
767	Waste Evap Cond Demin	None	None	None	None
768	Thermal Regeneration Demin	None	None	None	None
769	Thermal Regeneration Demin	None	None	None	None
770	Thermal Regeneration Demin	None	None	None	None
771	Thermal Regeneration Demin	None	None	None	None
772	Thermal Regeneration Demin	None	None	None	None
773	Recycle Holdup Tank A	None	None	None	None

Attachment C

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

Fire Area ID: 14 (Unit 1) - Aux Building Common El 733
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
774	Mixed Bed Demin	None	None	None	None
775	Mixed Bed Demin	None	None	None	None
776	Cation Bed Demin	None	None	None	None
777	Waste Evap Feed Filters	None	None	None	None
778	Recycle Holdup Tank B	None	None	None	None
779	Seal Water Inj. Filter	None	None	None	None
780	Seal Water Inj. Filter	None	None	None	None
781	Seal Water Inj. Filter	None	None	None	None
782	Fuel Pool Cooling Post Filter	None	None	None	None
783	Fuel Pool Cooling Pre-Filter	None	None	None	None
784	Fuel Pool Skimming Filter	None	None	None	None
785	RHR HX 2A, Cont Spray HX2A	None	None	None	None
786	RHR HX 2B, Cont Spray HX2B	None	None	None	None
787	Corridor	None	None	None	None
787A	Stairway	None	None	None	None
788	Boron Inj Tank, Boron Inj Recirc Pumps	None	E	E	Combustible Control: E Detection System, FA 14 Detection: E
789	RC Filters	None	None	None	None
790	Volume Control Tank	None	None	None	None

Title Fire Risk Evaluation for Fire Area 14 (Unit 1)

Risk Summary The delta CDF and delta LERF are below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [Common] 0.00E+00

Δ LERF Units: [Common] 0.00E+00

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The detection system is being required for DID. Requiring the detection system will provide additional margin to account for uncertainties in the analysis. The detection system will ensure a timely fire brigade response, including initiation of fire fighting activities. As a final consideration to ensure nuclear performance criteria are satisfied, recovery actions for risk are being required, as well as a modification for DID to ensure 1CA VA0007A remains available. In the event of no intervention by the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the analyzed scenarios. The analyzed scenarios bound potential fuel packages which can reasonably be expected to occur in this area. The ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-003 (OE-14-056)
VFDR	This component, which is normally open, required open for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 1*RN 597. Valve can fail as follows: If actuator stalls in either the OPEN or CLOSE direction, the gearbox will be damaged. Only means of re-positioning valve would be to replace gearbox, or use some type of wrench to place valve in desired position after gearbox and actuator have been removed (Reference MCC 1205.19-00-0084). Failure of cable 1*RN 597 may cause an IN 92-18 concern in the open direction before and after the swap. Failure of cable 1*RN 597 may also spuriously close 0RN-148AC prior to the swap to the SSF. However, there are no IN 92-18 concerns in the closed direction. An action to open the valve is required. This concern is not considered time critical due to volume of water in the CAST. There is approximately 18 hours per references in SLC 16.9.7. The RC water supply and this valve would need to be aligned within this 18 hours. This failure condition may 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.
Component(s)	0RN VA0148AC - 1A & 2A RN DISCH TO RC X-OVER ISOL
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-004 (OP-14-048)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. Failure of cable 1*RN 597 may cause an IN 92-18 concern (open direction) before and after the swap. Failure of cable 1*RN 597 may also spuriously close 0RN-148AC prior to the swap to the SSF. However, there are no IN 92-18 concerns in the closed direction. An action to open the valve is required. This concern is not considered time critical due to volume of water in the CAST. There is approximately 18 hours per references in SLC 16.9.7. The RC water supply and this valve would need to be aligned within this 18 hours. This failure condition may 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.
Component(s)	0RN VA0148AC - 1A & 2A RN DISCH TO RC X-OVER ISOL
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-005 (OP-14-043)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following. When 0WZ PU0001 is transferred to the SSF, cable 1*WZ 542 can spuriously cause the pump to start or the cable could prevent the pump from cycling as desired. There are also other cable failures that exist that may prevent the pump from cycling as desired prior to the transfer to the SSF. Either 0WZ PU0001 or 0WZ PU0003 pump is required for SSF function. Both pumps have spurious operation/loss of control concerns in this fire area. This failure condition may challenge 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.
Component(s)	0WZ PU0001 - A Groundwater Sump Pump A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-006 (OP-14-044)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following. When 0WZ PU0003 is transferred to the SSF, cable 1*WZ 544 can spuriously cause the pump to start or the cable could prevent the pump from cycling as desired. There are also other cable failures that exist that may prevent the pump from cycling as desired prior to the transfer to the SSF. Either 0WZ PU0001 or 0WZ PU0003 pump is required for SSF function. Both pumps have spurious operation/loss of control concerns in this fire area. This failure condition may challenge 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.
Component(s)	0WZ PU0003 - B Groundwater Sump Pump A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-007 (PH-14-033)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-008 (PH-14-033)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-011 (PH-14-028)
VFDR	This component, which is normally open, required to be cycled for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. Valve can spuriously operate if re-energized due to failure of cable 1 CA 536. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-012 (OP-14-004)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXG is not diesel backed. Either 1CS VA0018 or 1CA VA0004 is required closed to preclude air entrapment concerns. 1CA-4 could spuriously open due to failure of cable 1 CA 536. 1CS-18 could also spuriously open due to failure of cable 1 CA 536. This failure condition may 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.
Component(s)	1CA VA0004 - Unit 1 Auxiliary Feedwater Pumps Suction from Upper Surge Tank Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-013 (OP-14-007)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXC is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 1CA VA0006 could spuriously open due to failure of cable 1 CA 536. This failure condition may 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.
Component(s)	1CA VA0006 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Condensate Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-014 (PH-14-001)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation due to failure of cable 1*CA 519 until 1EMXA4 is swapped to its alternate power source. The credited TDCAP, which starts on loss of offsite power, will be damaged if the suction valve 1CA7AC goes closed. This component automatically goes to its required position (open) when 1EMXA4 is swapped. Circuit design removes possible cable failures upon timely transfer to the SSF. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0007AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Modification(s) Required to Satisfy DID: 1CA-VA0007AC modification to eliminate spurious operation

VFDR ID	VFDR-14-015 (PH-14-066)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 1 CA 536, 1*CA 595 and 1*EQB 519. The CA MOV isolation valve is subject to spurious operation and IN 92-18 concerns due to failure of cables 1*CA 529 and 1*CA 549. It is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 1D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0036AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1D S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-14-016 (OE-14-058)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cables 1*CA 529 and 1*CA 549. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may 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.
Component(s)	1CA VA0038B - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1D S/G Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-017 (PH-14-066)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 1 CA 536, 1*CA 595 and 1*EQB 519. The CA MOV isolation valve is subject to spurious operation and IN 92-18 concerns due to failure of cables 1*CA 529 and 1*CA 549. It is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 1D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0038B - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1D S/G Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-018 (OP-14-054)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation due to failure of cables 1 CA 536, 1*CA 595 or 1*EQB 519. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 1CA VA0050B is required to control level. However, 1CA VA0050B is subject to spurious operation and IN 92-18 concerns due to failure of cables 1*CA 534 and 1*CA 530. It is also affected by possible loss of power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	1CA VA0048AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1C S/G control valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-019 (PH-14-075)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 1 CA 536, 1*CA 595 or 1*EQB 519. The CA MOV isolation valve is subject to spurious operation and IN 92-18 concerns due to failure of cables 1*CA 534 and 1*CA 530. It is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1C to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0048AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1C S/G control valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-020 (OE-14-033)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cables 1*CA 534 and 1*CA 530. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may 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.
Component(s)	1CA VA0050B - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1C S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-021 (PH-14-075)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 1 CA 536, 1*CA 595 or 1*EQB 519. The CA MOV isolation valve is subject to spurious operation and IN 92-18 concerns due to failure of cables 1*CA 534 and 1*CA 530. It is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1C to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0050B - Unit 1 Turbine Driven Auxiliary Feedwater Pump Discharge to 1C S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-022 (OP-14-054)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation due to failure of cables 1 CA 536, 1*CA 595 or 1*EQB 519. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 1CA VA0054AC is required to control level. However, 1CA VA0054AC is subject to spurious operation due to failure of cable 1*CA 519 prior to transfer to the SSF. It is also affected by possible loss of power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	1CA VA0052AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G control valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-023 (PH-14-076)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 1 CA 536, 1*CA 595 or 1*EQB 519. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 1*CA 519. The CA MOV isolation valve is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0052AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G control valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-024 (OP-14-053)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation of CA MOV due to failure of cable 1*CA 519 prior to transfer to the SSF. This failure condition may 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.
Component(s)	1CA VA0054AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-025 (PH-14-076)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 1 CA 536, 1*CA 595 or 1*EQB 519. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 1*CA 519. The CA MOV isolation valve is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0054AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1B S/G isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-026 (OP-14-054)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation due to failure of cables 1 CA 536, 1*CA 595 or 1*EQB 519. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 1CA VA0066AC is required to control level. However, 1CA VA0066AC is subject to spurious operation due to failure of cable 1*CA 519 prior to transfer to the SSF. It is also affected by possible loss of power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	1CA VA0064AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G control valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 2 within 60 minutes.

VFDR ID	VFDR-14-027 (PH-14-077)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 1 CA 536, 1*CA 595 or 1*EQB 519. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 1*CA 519. The CA MOV isolation valve is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0064AB - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G control valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-028 (OP-14-053)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation of CA MOV due to failure of cable 1*CA 519 prior to transfer to the SSF. This failure condition may 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.
Component(s)	1CA VA0066AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-029 (PH-14-077)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 1 CA 536, 1*CA 595 or 1*EQB 519. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 1*CA 519. The CA MOV isolation valve is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 1A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0066AC - Unit 1 Turbine Driven Auxiliary Feedwater Pump discharge to 1A S/G isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-030 (O-14-005)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following. Valves 1CA-161C and 1CA-162C are required to be opened to support SSF operation. Procedure AP/1/A/5500/24 has instructions to energize, open valves, then de-energize the valves at the SDSP. However, there are multiple cable failures that may cause a loss of power, control, and indication if energized. 1CA-161C and 1CA-162C are normally closed and de-energized; therefore, they must be manually opened prior to inventory depletion of the CA Storage Tank. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	1CA VA0161C - Unit 1 Auxiliary Feedwater Pumps Suction Header Nuclear Service Water Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-031 (O-14-005)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following. Valves 1CA-161C and 1CA-162C are required to be opened to support SSF operation. Procedure AP/1/A/5500/24 has instructions to energize, open valves, then de-energize the valves at the SDSP. However, there are multiple cable failures that may cause a loss of power, control, and indication if energized. 1CA-161C and 1CA-162C are normally closed and de-energized; therefore, they must be manually opened prior to inventory depletion of the CA Storage Tank. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	1CA VA0162C - Unit 1 Auxiliary Feedwater Pumps Suction Header Nuclear Service Water Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-032 (OP-14-005)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXB is not diesel backed. Valve is required closed to preclude air entrapment concerns. Valve 1CM VA0265 could spuriously open due to failure of cable 1 CA 536. This failure condition may 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.
Component(s)	1CM VA0265 - Unit 1 Hotwell Auxiliary Feedwater Supply Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-033 (OP-14-006)
VFDR	This component, which is normally closed, required closed for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXG is not diesel backed. Either 1CS VA0018 or 1CA VA0004 is required closed to preclude air entrapment concerns. 1CA-4 could spuriously open due to failure of cable 1 CA 536. 1CS-18 could also spuriously open due to failure of cable 1 CA 536. This failure condition may 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.
Component(s)	1CS VA0018 - Unit 1 Auxiliary Feedwater Pumps Suction from Upper Surge Tank Header Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-034 (O-14-026)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*FW 502. Valve 1FW VA0027A is required closed to mitigate FWST drain down to the containment sump (MSO #14). The valve is required closed for CSD to allow alignment of the ND system to NC loop 3. Valves 1ND-19A, 1ND-4B, 1NI-184B, 1NI-185A, and 1FW-27A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1ND-4B and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - FWST to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-035 (OE-14-044)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*FW 502. Valve 1FW VA0027A is required closed to mitigate FWST drain down to the containment sump (MSO #14). The valve is required closed for CSD to allow alignment of the ND system to NC loop 3. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - FWST to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-036 (PH-14-021)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. 1ILE-PZRHTRA can also spuriously operate due to failure of cables 1*ILE 663 or 1*ILE 670. The trip of 1ILE-PZRHTRA can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRA - Backup Pressurizer Heater Group 1A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-037 (PH-14-021)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRB can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-038 (PH-14-021)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRC can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRC - Pressurizer Heater Group 1C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-039 (PH-14-021)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 1ILE-PZRHTRD can not be assured. The credited pressurizer heater group for SSF SSD areas is 1ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Safety/Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRD - Pressurizer Heater Group 1D
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-040 (PH-14-016)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The power cables for normal charging pumps 1NV PU0015 and 1NV PU0016 are located in this area. Valves 1NV-141A, 1NV-142B,1NV-150B, 1NV-151A, 1NV-221A and 1NV-222B are subject to spurious operation and IN 92-18 concerns. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance -based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0001 - 1A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-041 (PH-14-016)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The power cables for normal charging pumps 1NV PU0015 and 1NV PU0016 are located in this area. Valves 1NV-141A, 1NV-142B,1NV-150B, 1NV-151A, 1NV-221A and 1NV-222B are subject to spurious operation and IN 92-18 concerns. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance -based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0002 - 1B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-042 (PH-14-016)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The power cables for normal charging pumps 1NV PU0015 and 1NV PU0016 are located in this area. Valves 1NV-141A, 1NV-142B,1NV-150B, 1NV-151A, 1NV-221A and 1NV-222B are subject to spurious operation and IN 92-18 concerns. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance -based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0003 - 1C Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-043 (PH-14-016)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The power cables for normal charging pumps 1NV PU0015 and 1NV PU0016 are located in this area. Valves 1NV-141A, 1NV-142B,1NV-150B, 1NV-151A, 1NV-221A and 1NV-222B are subject to spurious operation and IN 92-18 concerns. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance -based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0004 - 1D Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-044 (O-14-027)
VFDR	This component, which is normally open, required closed for HSB, is affected by a spurious concern for the PORV due to the failure of cable 1*NC 908 before the swap to the SSF. Although the PORV Block Valves are unaffected by cable failures for a fire in this area, power may not be available to close the PORV block valves assuming offsite power is lost. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-045 (J226)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cable 1*NC 908 prior to transfer to the SSF. The respective NC block valve is affected by assumed loss of off-site power and safety diesels not credited for this area. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0034A - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-046 (O-14-026)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*ND 504 or 1*ND 507. Cables 1*ATC 409, 1*NI 679 or 1*NI 686 can also cause spurious operation. Valve 1ND VA0004B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1ND VA0019A or 1ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valves 1ND-19A, 1ND-4B, 1NI-184B, 1NI-185A, and 1FW -27A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1ND-4B and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0004B - 1B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-047 (OE-14-060)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*ND 504 or 1*ND 507. Valve 1ND VA0004B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1ND VA0019A or 1ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1ND VA0004B - 1B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-048 (O-14-026)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*ND 501. Cables 1*ND 521 or 1*NI 735 can also cause spurious operation. Valve 1ND VA0019A is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1ND VA0019A or 1ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valves 1ND-19A, 1ND-4B, 1NI-184B, 1NI-185A, and 1FW-27A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1ND-4B and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0019A - 1A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-049 (OE-14-041)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*ND 501. Valve 1ND VA0019A is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (1ND VA0019A or 1ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1ND VA0019A - 1A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-050 (O-14-026)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NI 631. Cables 1*FW 549 or 1*NI 632 can also cause spurious operation. Valve 1NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1ND-19A, 1ND-4B, 1NI-184B, 1NI-185A, and 1FW-27A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1ND-4B and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-051 (OE-14-061)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NI 631. Valve 1NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve not evaluated in calc MCC 1205.19-00-0084. This failure condition may challenge the 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.
Component(s)	1NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-052 (OP-14-060)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NI 631. Cables 1*FW 549 or 1*NI 632 can also cause spurious operation. Valve 1NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, 1NS-20A, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1NS-1B, 1NS-3B, and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-053 (O-14-026)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NI 671. Cables 1*ATC 2101 or 1*NI 1011 can also cause spurious operation. Valve 1NI VA0185A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1ND-19A, 1ND-4B, 1NI-184B, 1NI-185A, and 1FW-27A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1ND-4B and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-054 (OE-14-037)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NI 671. Valve 1NI VA0185A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-055 (OP-14-060)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NI 671. Cables 1*ATC 2101 or 1*NI 1011 can also cause spurious operation. Valve 1NI VA0185A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, 1NS-20A, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1NS-1B, 1NS-3B, and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-056 (OE-14-064)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 502. Valve 1NS VA0001B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1NS VA0001B - 1B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-057 (OP-14-060)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 502. Cables 1*NI 631, 1*NS 503 or 1*NS 544 can also cause spurious operation. Valve 1NS VA0001B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, 1NS-20A, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1NS-1B, 1NS-3B, and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0001B - 1B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-058 (OE-14-040)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 503. Valve 1NS VA0003B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may challenge the 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.
Component(s)	1NS VA0003B - 1B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-059 (OP-14-060)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 503. Cables 1*NS 502 or 1*NS 544 can also cause spurious operation. Valve 1NS VA0003B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, 1NS-20A, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1NS-1B, 1NS-3B, and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. Included in MSO (Multiple Spurious Operation) Scenario #15, this failure condition may challenge the 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.
Component(s)	1NS VA0003B - 1B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-060 (OE-14-025)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 511. Valve 1NS VA0018A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged in the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	1NS VA0018A - 1A Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-061 (OP-14-060)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 511. Valve 1NS VA0018A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1NS-1B, 1NS -3B, 1NS-18A, 1NS-20A, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1NS-1B, 1NS-3B, and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0018A - 1A Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-062 (OE-14-036)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 512. Valve 1NS VA0020A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may challenge the 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.
Component(s)	1NS VA0020A - 1A Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-063 (OP-14-060)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*NS 512. Cable 1*NS 511 can also cause spurious operation. Valve 1NS VA0020A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 1NS-1B, 1NS-3B, 1NS-18A, 1NS-20A, 1NI-184B, and 1NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 1EMXB1, which provides power to 1NS-1B, 1NS-3B, and 1NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0020A - 1A Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-067 (O-14-026)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1ND VA00019A, 1ND VA0004B, and 1FW VA0027A may spuriously open and have IN 92-18 concerns. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Also power supply 1EMXB1, which provides power to 1ND-4B and 1NI-184B, is located in the affected area. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-068 (OP-14-060)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 1NI VA0184B, 1NI VA0185A, 1NS VA0001B, 1NS VA0003B, 1NS VA0018A, and 1NS VA0020A may spuriously open and have IN 92-18 concerns. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Also power supply 1EMXB1, which provides power to 1NS-1B, 1NS-3B, and 1NI-184B, is located in the affected area. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-069 (PH-14-022)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0083 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0083 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0078 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0078 or 1SM VA0083 is required closed. Valve 1SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0083 - A Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-070 (PH-14-023)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0089 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0089 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0084 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0084 or 1SM VA0089 is required closed. Valve 1SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0089 - B Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-071 (PH-14-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0095 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0095 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0090 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0090 or 1SM VA0095 is required closed. Valve 1SM VA0095 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0095 - C Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-072 (PH-14-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 1SM VA0101 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 1SM VA0101 is in the main control room. Transfer to the SSF has already occurred. Valve 1SM VA0096 fails open on loss of power to 1ELNPNTL6 or loss of air. Power supply 1ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 1SM VA0096 or 1SM VA0101 is required closed. Valve 1SM VA0101 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM VA0101 - D Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-142 (OE-14-074)
VFDR	This component, which is normally closed, required closed for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cables 1*ATC 401A or 1*NS 528. Valve 1NS VA0038B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve not evaluated in calc MCC 1205.19-00-0084. This failure condition may challenge the 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.
Component(s)	1NS VA0038B - 1B Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-144 (OP-14-066)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*FW 502. 1FW VA0027A is also subject to loss of power. Valve 1FW VA0027A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 1NS VA0043A has a cable failure that may spuriously operate the valve. Valve 1NS VA0038B has cable failures that may cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-145 (OP-14-066)
VFDR	This component, which is normally off, required off for HSB, is affected by possible start due to interlock failure. Pump 1ND PU0001 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 1NS VA0043A has a cable failure that may spuriously operate the valve. Valve 1NS VA0038B has cable failures that may cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND PU0001 - 1A Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-146 (OP-14-066)
VFDR	This component, which is normally off, required off for HSB, is affected by possible start due to interlock failure. Pump 1ND PU0002 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 1NS VA0043A has a cable failure that may spuriously operate the valve. Valve 1NS VA0038B has cable failures that may cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND PU0002 - 1B Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-147 (OP-14-066)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*ND 504 or 1*ND 507. Cables 1*ATC 409, 1*NI 679 or 1*NI 686 can also cause spurious operation. Valve 1ND VA0004B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 1NS VA0043A has a cable failure that may spuriously operate the valve. Valve 1NS VA0038B has cable failures that may cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0004B - 1B Residual Heat Removal Suction from FWST or Reactor Coolant Containment Isolation Outside Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-148 (OP-14-066)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 1*ND 501. Cables 1*ND 521 or 1*NI 735 can also cause spurious operation. Valve 1ND VA0019A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 1NS VA0043A has a cable failure that may spuriously operate the valve. Valve 1NS VA0038B has cable failures that may cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1ND VA0019A - 1A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-149 (OP-14-066)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern due to spurious operation from failure of cables 1*ATC 401A or 1*NS 528. Valve can also spuriously operate due to failure of cable 1*NS 527. Valve 1NS VA0038B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 1NS VA0043A has a cable failure that may spuriously operate the valve. Valve 1NS VA0038B has cable failures that may cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0038B - 1B Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 1) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-150 (OP-14-066)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 1*NI 735. Valve 1NS VA0043A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 1NS VA0043A has a cable failure that may spuriously operate the valve. Valve 1NS VA0038B has cable failures that may cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NS VA0043A - 1A Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-158 (OP-14-066)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A combination of the ND pump suction valves and 1FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 1FW VA0027A, 1ND VA00019A, and 1ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 1NS VA0043A has a cable failure that may spuriously operate the valve. Valve 1NS VA0038B has cable failures that may cause spurious operation and IN 92-18 concerns. The HSB concern would be the spurious operation of 1NV 1012C (Cable 1 NV 818) caused by flooding due to the spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	1NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
717	Cable Tray Access
718	Stairway
719	Inst Comp Air Tank
719A	Boronometer room
720	Stm Gen Blowdown HX
721	Seal Water HX
722	600v MCC, 1EMXB, 1EMXB-1, 1EMXB-2, 1EMXB-3
723	Corridor, Component Cooling Pumps
723A	600v MCC 2EMXH
724	600v MCC, 2EMXB, 2EMXB-1, 2EMXB-2, 2EMXB-3
725	Seal Water HX
726	Inst Comp Air Tank
726A	Boronometer room
727	Stm Gen Blowdown HX
728	Volume Control Tank
729	RC Filters
730	Boron Inj Tank, Boron Inj Recirc Pumps
731	Corridor
731A	Stairway
732	RHR HX, Cont Spray HX
733	RHR HX, Cont Spray HX
734	Fuel Pool Skimmer Filter
735	Fuel Pool Pre-Filter
736	Fuel Pool Post Filter
737	Boric Acid Tank, Trans Pumps and Filter
738	SG Blowdown Recycle Demin Effluent Filter, Seal Water Filter
739	Seal Water Inj. Filter
740	SG Blowdown Recycle Demin Effluent Filter, Seal Water Inj. Filter
741	Spent Resin Sluice Filter
742	Mixed Bed Demin
743	Cation Bed Demin
744	Cation Bed Demin
745	Thermal Regeneration Demin 1C
746	Thermal Regeneration Demin 1B
747	Thermal Regeneration Demin 1A
748	Boric Acid Tank, Trans Pumps and Filter
749	SG Blowdown Demin 1B
750	Stm. Gen. Blowdown Demin 1A
751	Thermal Regeneration Demin 1E

Fire Area ID: 14 (Unit 2) - Aux Building Common El 733 — **Fire Area Definition**
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description
752	Thermal Regeneration Demin 1D
753	Waste Monitor Tank Filter
754	Waste Monitor Tank Demin
755	Laundry & Hot Shower Tank Carbon Filter
756	Laundry & Hot Shower Tank Primary Filter
757	Floor Drain Tank Filter
758	Corridor
759	Stairway Lobby
759A	Stairway
760	Recycle Evap Cond Filter
761	Recycle Evap Cond Demin
762	Recycle Evap Feed Demin
763	Recycle Evap Filter
764	Recycle Evap Feed Filter
765	Recycle Evap Feed Demin
766	Waste Evap Cond Filter
767	Waste Evap Cond Demin
768	Thermal Regeneration Demin
769	Thermal Regeneration Demin
770	Thermal Regeneration Demin
771	Thermal Regeneration Demin
772	Thermal Regeneration Demin
773	Recycle Holdup Tank A
774	Mixed Bed Demin
775	Mixed Bed Demin
776	Cation Bed Demin
777	Waste Evap Feed Filters
778	Recycle Holdup Tank B
779	Seal Water Inj. Filter
780	Seal Water Inj. Filter
781	Seal Water Inj. Filter
782	Fuel Pool Post Filter
783	Fuel Pool Pre-Filter
784	Fuel Pool Skimmer Filter
785	RHR HX 2A, Cont Spray HX2A
786	RHR HX 2B, Cont Spray HX2B
787	Corridor
787A	Stairway
788	Boron Inj Tank, Boron Inj Recirc Pumps

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

Fire Area ID: 14 (Unit 2) - Aux Building Common El 733 — **Fire Area Definition**
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description
789	RC Filters
790	Volume Control Tank

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring available in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action 02. Auxiliary Building 10 CFR50 Appendix R III.G.2.c Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the unprotected steel supports penetrating the fire rated barriers separating redundant safe shutdown system components (pumps) as required by Section III.G.2.c of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- Low combustible loading in area.
- Fire detection is installed over the pumps.
- Automatic suppression is installed over the pumps.
- Manual suppression (portable extinguishers and hose stations) is available for fire brigade response.

The areas affected by the deviation are in the auxiliary building on elevations 716 and 733 feet. Fire areas affected include 2, 2A, 3, 3A, 4, and 14. The walls, floors, and ceilings of these fire areas are of reinforced concrete construction and provide 3-hour fire rated barriers. Mechanical and electrical penetrations in rated barriers are sealed with an approved 3-hour silicone foam seal or have been qualified by a fire test. HVAC ducts are provided with 1-1/2-hour UL fire rated dampers.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Licensing Action 03. Auxiliary Building Expansion Joint Deviation

Licensing Basis

Deviation request per the 8/3/1984 Duke letter to the NRC provides the following justification for the cork seismic expansion joints provided in the 3 hour fire rated floor and wall assemblies as required by Section III.G.2.a of App R, which was approved by the NRC in a letter dated 5/15/1989.

- Predominant combustible in the area is cable insulation.
- Fire detectors are installed on either side of the seismic gaps.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The floors, walls, and ceilings are 12 to 24 inches thick.
- The limited exposed area of the cork.
- The burning characteristics of the cork.
- The combustibles are not installed directly at the seismic gaps.
- In the event a fire develops and transmits heat through the gaps and damages safe shutdown cables, the safe shutdown system is available and is independent of the areas involved.

The NRC approved Duke's deviation request in a letter dated 5/15/1989.

In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0010 Part 6.5.4 McGuire Fire Barrier Penetration Seal Safety Analysis
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the safety significance of fire barrier penetration seal deficiencies found at McGuire Nuclear Station between November 1998 and December 31, 1999. These seal deficiencies resulted from voids and gaps found in the silicon foam of large blockout installations. Multiple fire barriers were identified. This Engineering Evaluation will focus on the barriers separating the redundant KC, NV, RN, and ND pumps. The calculation determined the fire barriers are considered adequate for the hazard and a fire is not anticipated to propagate from one side of the fire barriers to the other. This is based on: • Limited in-situ and transient combustibles • Area fixed automatic sprinkler systems • Administrative controls for hot work and combustible loading • Area fire detection • Fire brigade response • Penetration seal construction. Due to the conditions identified above and the presence of the SSF, a fire in these areas is not anticipated to impact the site's ability to achieve and maintain safe shutdown.

Engineering Evaluation ID Revision	MCC-1435.03-00-0012, Att. 05 Fire Protection Evaluation For Over Sized Pipe Penetration
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at ten (10) penetrations (716-16.1-12, 716-16.1-13, 2-716-108.1-6, 733-92.1-1, 733-92.1-2, 750-21.2-1, 750-35.1-1, 750-35.1-2, 750-35.1-3, and 750-178.1-10). These seal configurations do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. In each case, the pipe size and opening size exceeds the limitation of the associated typical detail design. Each of these penetrations is located in a NRC committed fire barrier. The calculation determined the penetration seals currently installed at penetrations identified are adequate for the hazard. In all cases the present seal configuration has been demonstrated as capable of providing a 3 hour F rating. Furthermore, applications in 1-1/2 hour rated barriers do not present realistic T rating concerns, due to the location of the seals and the fact that the 1-1/2 hour rated barriers are partial length walls (i.e., they do not provide complete separation of adjacent areas). Applications in 3 hour rated barriers do not result in T rating concerns due to the minimal increase in pipe size (12" actual vs. 10" qualified by test) and the fact that no exposed combustible materials are in contact with or adjacent to these penetrations. Therefore, a fire initiating in one area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, and postulated safe shutdown methods will not be adversely impacted for these plant areas.

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision	MCC-1435.03-00-0014, Att. 07 GL 86-10 Evaluation of Unrated fire barrier open grating locations at Auxiliary Building elevation 733' (FA 4 to FA 14)
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	The calculation evaluated the two open floor gratings in the Auxiliary Building (AB) barrier at elevation 733' separating Fire Areas (FAs) 4 and 14. The calculation determined the barrier to be adequate for the hazard and provides sufficient separation of the two adjacent fire areas. This is due to the following: • the combustible controls, • automatic detection, • presence of well distributed manual fire suppression capability in the vicinity of the rooms containing the open grating, • use of SSS for safe shutdown, • the floor-ceiling height providing sufficient room volume for hot gas layer dispersion, • the fire brigade response. The following open item was identified during this evaluation: 1. NSD-313 needs to be revised to identify rooms 602, 603, 646, 647, 730, and 788 as Exclusion Areas for transient combustibles during all modes.

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

Fire Area ID: 14 (Unit 2) - Aux Building Common El 733
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
(All)	Area Wide	None	None	R, D	Modifications: D Procedures/Recovery Actions: R
717	Cable Tray Access	None	None	None	None
718	Stairway	None	None	None	None
719	Inst Comp Air Tank	None	None	None	None
719A	Boronometer room	None	None	None	None
720	Stm Gen Blowdown HX	None	None	None	None
721	Seal Water HX	None	None	None	None
722	600v MCC, 1EMXB, 1EMXB-1, 1EMXB-2, 1EMXB-3	None	None	None	None
723	Corridor, Component Cooling Pumps	E, D	E	E	Combustible Control: E Detection System, FA 14 Detection: E Water Suppression, FA 14 Suppression: E D
723A	600v MCC 2EMXH	None	None	None	None
724	600v MCC, 2EMXB, 2EMXB-1, 2EMXB-2, 2EMXB-3	None	D	None	Detection System, FA 14 Detection: D
725	Seal Water HX	None	None	None	None
726	Inst Comp Air Tank	None	None	None	None
726A	Boronometer room	None	None	None	None
727	Stm Gen Blowdown HX	None	None	None	None
728	Volume Control Tank	None	None	None	None
729	RC Filters	None	None	None	None
730	Boron Inj Tank, Boron Inj Recirc Pumps	None	E	E	Combustible Control: E Detection System, FA 14 Detection: E
731	Corridor	None	None	None	None
731A	Stairway	None	None	None	None
732	RHR HX, Cont Spray HX	None	None	None	None
733	RHR HX, Cont Spray HX	None	None	None	None
734	Fuel Pool Skimmer Filter	None	None	None	None
735	Fuel Pool Pre-Filter	None	None	None	None
736	Fuel Pool Post Filter	None	None	None	None
737	Boric Acid Tank, Trans Pumps and Filter	None	None	None	None
738	SG Blowdown Recycle Demin Effluent Filter, Seal Water Filter	None	None	None	None
739	Seal Water Inj. Filter	None	None	None	None
740	SG Blowdown Recycle Demin Effluent Filter, Seal Water Inj. Filter	None	None	None	None

Attachment C

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

Fire Area ID: 14 (Unit 2) - Aux Building Common El 733
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
741	Spent Resin Sluice Filter	None	None	None	None
742	Mixed Bed Demin	None	None	None	None
743	Cation Bed Demin	None	None	None	None
744	Cation Bed Demin	None	None	None	None
745	Thermal Regeneration Demin 1C	None	None	None	None
746	Thermal Regeneration Demin 1B	None	None	None	None
747	Thermal Regeneration Demin 1A	None	None	None	None
748	Boric Acid Tank, Trans Pumps and Filter	None	None	None	None
749	SG Blowdown Demin 1B	None	None	None	None
750	Stm. Gen. Blowdown Demin 1A	None	None	None	None
751	Thermal Regeneration Demin 1E	None	None	None	None
752	Thermal Regeneration Demin 1D	None	None	None	None
753	Waste Monitor Tank Filter	None	None	None	None
754	Waste Monitor Tank Demin	None	None	None	None
755	Laundry & Hot Shower Tank Carbon Filter	None	None	None	None
756	Laundry & Hot Shower Tank Primary Filter	None	None	None	None
757	Floor Drain Tank Filter	None	None	None	None
758	Corridor	None	None	None	None
759	Stairway Lobby	None	None	None	None
759A	Stairway	None	None	None	None
760	Recycle Evap Cond Filter	None	None	None	None
761	Recycle Evap Cond Demin	None	None	None	None
762	Recycle Evap Feed Demin	None	None	None	None
763	Recycle Evap Filter	None	None	None	None
764	Recycle Evap Feed Filter	None	None	None	None
765	Recycle Evap Feed Demin	None	None	None	None
766	Waste Evap Cond Filter	None	None	None	None
767	Waste Evap Cond Demin	None	None	None	None
768	Thermal Regeneration Demin	None	None	None	None
769	Thermal Regeneration Demin	None	None	None	None
770	Thermal Regeneration Demin	None	None	None	None
771	Thermal Regeneration Demin	None	None	None	None
772	Thermal Regeneration Demin	None	None	None	None
773	Recycle Holdup Tank A	None	None	None	None

Attachment C

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
774	Mixed Bed Demin	None	None	None	None
775	Mixed Bed Demin	None	None	None	None
776	Cation Bed Demin	None	None	None	None
777	Waste Evap Feed Filters	None	None	None	None
778	Recycle Holdup Tank B	None	None	None	None
779	Seal Water Inj. Filter	None	None	None	None
780	Seal Water Inj. Filter	None	None	None	None
781	Seal Water Inj. Filter	None	None	None	None
782	Fuel Pool Post Filter	None	None	None	None
783	Fuel Pool Pre-Filter	None	None	None	None
784	Fuel Pool Skimmer Filter	None	None	None	None
785	RHR HX 2A, Cont Spray HX2A	None	None	None	None
786	RHR HX 2B, Cont Spray HX2B	None	None	None	None
787	Corridor	None	None	None	None
787A	Stairway	None	None	None	None
788	Boron Inj Tank, Boron Inj Recirc Pumps	None	E	E	Combustible Control: E Detection System, FA 14 Detection: E
789	RC Filters	None	None	None	None
790	Volume Control Tank	None	None	None	None

Title	Fire Risk Evaluation for Fire Area 14 (Unit 2)
Risk Summary	The delta CDF and delta LERF are above the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) but within the acceptance thresholds in RG 1.174. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.
Δ CDF	Units: [Common] 1.13E-06
Δ LERF	Units: [Common] 1.56E-07
DID Maintained	A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The detection system is being required for DID. Requiring the detection system will provide additional margin to account for uncertainties in the analysis. The detection system will ensure a timely fire brigade response, including initiation of fire fighting activities. In addition, the installed suppression system in the area of the 1B1 KC pump is being required for DID to provide additional margin for analytical uncertainties due to the location of multiple Unit 2 circuits located in the vicinity of the pump. In order to provide assurance that at least 2 steam generators are provided with auxiliary feedwater from either the MDCA or TDCA, administrative controls will designate the area bounded by column lines EE to FF and 54 to 58 as an exclusion zone for transient combustible control. As a final consideration to ensure nuclear performance criteria are satisfied, recovery actions for risk are being required, as well as a modification to ensure 2CA VA0007A remains available. In the event of no intervention by the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the analyzed scenarios. The analyzed scenarios bound potential fuel packages which can reasonably be expected to occur in this area. The ability to meet nuclear safety performance criteria is ensured.
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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-001 (OE-14-055)
VFDR	This component, which is normally open, required open for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 1*RN 604. Valve can fail as follows: If actuator stalls in either the OPEN or CLOSE direction, the gearbox will be damaged. Only means of re-positioning valve would be to replace gearbox, or use some type of wrench to place valve in desired position after gearbox and actuator have been removed (Reference MCC 1205.19-00-0084). An action to open the valve may be required. Cable 1*RN 604 contains hot conductors from other circuits, therefore a hot short may bypass the limit switch in 0RN-4AC and may force the valve open and damage the valve (before and after the swap to the SSF). A hot short in 1*RN 604 may also spuriously close 0RN-4AC before the swap to the SSF. However, there are no IN 92-18 concerns in the closed direction. This concern is not considered time critical due to volume of water in the CAST. There is approximately 18 hours per references in SLC 16.9.7. The RC water supply and this valve would need to be aligned within this 18 hours. This failure condition may 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.
Component(s)	0RN VA0004AC - 1B & 2B RN SUPPLY FROM RC ISOL
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-002 (OP-14-045)
VFDR	This component, which is normally open, required open for HSB, is affected by the failure of cable 1*RN 604. Cable 1*RN 604 contains hot conductors from other circuits, therefore a hot short may bypass the limit switch in 0RN-4AC and may force the valve open and damage the valve (before and after the swap to the SSF). A hot short in 1*RN 604 may also spuriously close 0RN-4AC before the swap to the SSF. However, there are no IN 92-18 concerns in the closed direction. 0RN VA0004AC is required to be open to provide RC Water to the Unit 2 Turbine Driven AFW Pump. This concern is not considered time critical due to volume of water in the CAST. There is approximately 18 hours per references in SLC 16.9.7. The RC water supply and this valve would need to be aligned within this 18 hours. This failure condition may 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.
Component(s)	0RN VA0004AC - 1B & 2B RN SUPPLY FROM RC ISOL
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-005 (OP-14-043)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following. When 0WZ PU0001 is transferred to the SSF, cable 1*WZ 542 can spuriously cause the pump to start or the cable could prevent the pump from cycling as desired. There are also other cable failures that exist that may prevent the pump from cycling as desired prior to the transfer to the SSF. Either 0WZ PU0001 or 0WZ PU0003 pump is required for SSF function. Both pumps have spurious operation/loss of control concerns in this fire area. This failure condition may challenge 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.
Component(s)	0WZ PU0001 - A Groundwater Sump Pump A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-006 (OP-14-044)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following. When 0WZ PU0003 is transferred to the SSF, cable 1*WZ 544 can spuriously cause the pump to start or the cable could prevent the pump from cycling as desired. There are also other cable failures that exist that may prevent the pump from cycling as desired prior to the transfer to the SSF. Either 0WZ PU0001 or 0WZ PU0003 pump is required for SSF function. Both pumps have spurious operation/loss of control concerns in this fire area. This failure condition may challenge 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.
Component(s)	0WZ PU0003 - B Groundwater Sump Pump A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-073 (PH-14-056)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-074 (PH-14-056)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-077 (PH-14-058)
VFDR	This component, which is normally open, required to be cycled for HSB, is affected by an assumed loss of offsite power. Power supply 2EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-078 (OE-14-027)
VFDR	This component, which is normally open, required open for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 2*CA 557. Valve can fail as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may 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.
Component(s)	2CA VA0007A - Unit 2 Turbine Driven Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Modification(s) Required to Satisfy DID: 2CA-VA0007A modifcation to eliminate possible spurious operation

VFDR ID	VFDR-14-079 (PH-14-069)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation from failure of cables 2*CA 557, 2*CA 517 or 2*CA 519. Cable 2*CA 557 can cause an IN 92-18 concern. The credited TDCAP, which starts on loss of offsite power, will be damaged if the suction valve 2CA-7A goes closed. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0007A - Unit 2 Turbine Driven Auxiliary Feedwater Pump Suction Isolation Valve
Disposition	Modification(s) Required to Satisfy DID: 2CA-VA0007A modification to eliminate possible spurious operation

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-080 (PH-14-067)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 595, 2*CA 654 or 2*EQB 519. The CA MOV isolation valve is subject to spurious operation and IN 92-18 concerns due to failure of cables 2*CA 527, 2*CA 528, 2*CA 529 or 2*CA 642. It is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 2D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0036AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-14-081 (OE-14-059)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 2*CA 527 and either 2*CA 528, 2*CA 529 or 2*CA 642. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may 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.
Component(s)	2CA VA0038B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-14-082 (PH-14-067)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 595, 2*CA 654 or 2*EQB 519. The CA MOV isolation valve is subject to spurious operation and IN 92-18 concerns due to failure of cables 2*CA 527, 2*CA 528, 2*CA 529 or 2*CA 642. It is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to the unused Steam Generator 2D to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0038B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2D S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-083 (OP-14-055)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation due to failure of cables 2*CA 595, 2*CA654 or 2*EQB 519. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 2CA VA0050B is required to control level. However, 2CA VA0050B is subject to spurious operation and IN 92-18 concerns due to failure of cables 2*CA 575 and either 2*CA 528, 2*CA 530 or 2*CA 642. It is also affected by possible loss of power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	2CA VA0048AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-14-084 (PH-14-078)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 595, 2*CA 654 or 2*EQB 519. The CA MOV isolation valve is subject to spurious operation and IN 92-18 concerns due to failure of cables 2*CA 575 and either 2*CA 528, 2*CA 530 or 2*CA 642. It is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2C to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0048AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-14-085 (OE-14-057)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cables 2*CA 575 and either 2*CA 528, 2*CA 530, or 2*CA 642. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may 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.
Component(s)	2CA VA0050B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-086 (PH-14-078)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 595, 2*CA654 or 2*EQB 519. The CA MOV isolation valve is subject to spurious operation and IN 92-18 concerns due to failure of cables 2*CA 575 and either 2*CA 528, 2*CA 530 or 2*CA 642. It is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2C to prevent overfill. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0050B - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2C S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-14-087 (OP-14-055)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation due to failure of cables 2*CA 595, 2*CA 654 or 2*EQB 519. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 2CA VA0054AC is required to control level. However, 2CA VA0054AC is subject to spurious operation due to failure of cable 2*CA 519 prior to transfer to the SSF. It is also affected by possible loss of power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	2CA VA0052AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-14-088 (PH-14-079)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 595, 2*CA 654 or 2*EQB 519. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 2*CA 519. The CA MOV isolation valve is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0052AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-089 (OP-14-053)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation of CA MOV due to failure of cable 2*CA 519 prior to transfer to the SSF. This failure condition may 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.
Component(s)	2CA VA0054AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-14-090 (PH-14-079)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 595, 2*CA 654 or 2*EQB 519. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 2*CA 519. The CA MOV isolation valve is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2B to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0054AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2B S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-14-091 (OP-14-055)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation due to failure of cables 2*CA 595, 2*CA 654 or 2*EQB 519. The AOV solenoid valve is required to be energized to allow control board manual loader to function. If solenoid is de-energized, the AOV fails open and manual control of MOV 2CA VA0066AC is required to control level. However, 2CA VA0066AC is subject to spurious operation due to failure of cable 2*CA 519 prior to transfer to the SSF. It is also affected by possible loss of power. The TDCAP feeds are the credited paths in this area. This failure condition may 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.
Component(s)	2CA VA0064AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-092 (PH-14-080)
VFDR	This component, which is normally open, required open for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 595, 2*CA 654 or 2*EQB 519. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 2*CA 519. The CA MOV isolation valve is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0064AB - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Control Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-14-093 (OP-14-053)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by spurious operation of CA MOV due to failure of cable 2*CA 519 prior to transfer to the SSF. This failure condition may 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.
Component(s)	2CA VA0066AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

VFDR ID	VFDR-14-094 (PH-14-080)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by the following. The CA AOV control valve may spuriously operate due to failure of cables 2*CA 595, 2*CA 654 or 2*EQB 519. Prior to SSF transfer, CA MOV is subject to spurious operation due to failure of cable 2*CA 519. The CA MOV isolation valve is also affected by possible loss of power. The concern is to throttle flow of the TDCA Pump feed to Steam Generator 2A to prevent overfill. The TDCAP feeds are the credited paths in this area. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA VA0066AC - Unit 2 Turbine Driven Auxiliary Feedwater Pump Discharge to 2A S/G Inlet Isolation Valve
Disposition	Recovery Action(s) Required to Satisfy Risk Criteria: Operator Fails to Manually Throttle the Auxiliary FW Flow; action (applicable to TDCAP) involves manually throttling valves located in Fire Area 3 within 60 minutes.

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-095 (O-14-028)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following: A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*FW 509. Cable 2*ATC 601 can also cause spurious operation. Valve 2FW VA0027A is required closed to mitigate FWST drain down to the containment sump (MSO #14). The valve is required closed for CSD to allow alignment of the ND system to NC loop 3. Valves 2ND-19A, 2ND-4B, 2NI-184B, 2NI-185A, and 2FW-27A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2ND-4B and 2NI-184B, is located in the affected area. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2FW VA0027A - FWST to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-096 (OE-14-003)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*FW 509. Valve 2FW VA0027A is required closed to mitigate FWST drain down to the containment sump (MSO #14). The valve is required closed for CSD to allow alignment of the ND system to NC loop 3. Valve can fail as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2FW VA0027A - FWST to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-097 (PH-14-055)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. 2ILE-PZRHTRA can also spuriously operate due to failure of cable 2*ILE 664. The trip of 2ILE-PZRHTRA can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRA - Backup Pressurizer Heater Group 2A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-098 (PH-14-055)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of offsite power and the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRB can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Safety/Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-099 (PH-14-055)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRC can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRC - Pressurizer Heater Group 2C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-100 (PH-14-055)
VFDR	This component, which is normally cycled, required off for HSB, is affected by the possible loss of non-diesel backed control power. The trip of 2ILE-PZRHTRD can not be assured. The credited pressurizer heater group for SSF SSD areas is 2ILE-SSSPZRHTRD. The control room controls are available provided the respective 125VDC-Non-Safety is available. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRD - Pressurizer Heater Group 2D
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-101 (PH-14-016)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The power cables for normal charging pumps 2NV PU0015 and 2NV PU0016 are located in this area. 2NV PU0015 is also subject to spurious operation due failure of cable 2*ILE 664. Valves 2NV-141A, 2NV-142B,2NV-150B, 2NV-151A, 2NV-221A and 2NV-222B are subject to spurious operation and IN 92-18 concerns. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0001 - 2A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-102 (PH-14-016)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The power cables for normal charging pumps 2NV PU0015 and 2NV PU0016 are located in this area. 2NV PU0015 is also subject to spurious operation due failure of cable 2*ILE 664. Valves 2NV-141A, 2NV-142B,2NV-150B, 2NV-151A, 2NV-221A and 2NV-222B are subject to spurious operation and IN 92-18 concerns. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0002 - 2B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-103 (PH-14-016)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The power cables for normal charging pumps 2NV PU0015 and 2NV PU0016 are located in this area. 2NV PU0015 is also subject to spurious operation due failure of cable 2*ILE 664. Valves 2NV-141A, 2NV-142B,2NV-150B, 2NV-151A, 2NV-221A and 2NV-222B are subject to spurious operation and IN 92-18 concerns. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0003 - 2C Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-104 (PH-14-016)
VFDR	This component, which is normally on, required off for HSB, is affected by the possible loss of all seal cooling and the inability to assure a trip of the pumps. The power cables for normal charging pumps 2NV PU0015 and 2NV PU0016 are located in this area. 2NV PU0015 is also subject to spurious operation due failure of cable 2*ILE 664. Valves 2NV-141A, 2NV-142B,2NV-150B, 2NV-151A, 2NV-221A and 2NV-222B are subject to spurious operation and IN 92-18 concerns. KC to the thermal barrier is lost due to Sp interlock (not modeled, assumed lost) (MSO #3 and 4). The control room trip of the NC Pumps may not be available if non-credited DC power is lost on loss of offsite power or fault coordination. This action is required to be performed within 3 minutes of losing all NC pump seal cooling. The NC Pumps can also be tripped at the "safety" breakers or at the 6900V supply breaker. This failure condition may challenge the 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0004 - 2D Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-105 (O-14-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to failure of cables 2*NC 761, 2*NC 776 or 2*NC 780. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area. The respective PORV is subject to spurious operation due to failure of cables 2*NC 780, 2*NC 783 or 2*NC 798 prior to disconnecting plugs at the SSF disconnect enclosure (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0031B - Pressurizer PORV Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-106 (PH-14-043)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cables 2*NC 780, 2*NC 783 or 2*NC 798 prior to transfer to the SSF. The respective PORV block valve is affected by spurious operation due to failure of cables 2*NC 761, 2*NC 776 or 2*NC 780. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0032B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-107 (O-14-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by a spurious concern for the PORV due to the failure of cable 2*NC 799 before the swap to the SSF. Although the PORV Block Valves are unaffected by cable failures for a fire in this area, power may not be available to close the PORV block valves assuming offsite power is lost. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0033A - Pressurizer PORV Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-108 (J236)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cable 2*NC 799. The respective NC block valve is affected by assumed loss of off-site power and safety diesels not credited for this area. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0034A - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-109 (O-14-025)
VFDR	This component, which is normally open, required closed for HSB, is affected by is affected by spurious operation due to failure of cables 2*NC 761, 2*NC 776 or 2*NC 780. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area. The respective PORV is subject to spurious operation due to failure of cables 2*NC 780, 2*NC 783 or 2*NC 798 prior to disconnecting plugs at the SSF disconnect enclosure (MSO#18). Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0035B - Pressurizer PORV Isolation valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-110 (PH-14-043)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation due to failure of cables 2*NC 780, 2*NC 783 or 2*NC 798 prior to transfer to the SSF. The respective PORV block valve is affected by spurious operation due to failure of cables 2*NC 761, 2*NC 776 or 2*NC 780. It is also affected by an assumed loss of off-site power and the safety diesels not being credited for this area (MSO#18) Multiple PORV and PORV Block combinations can spuriously operate in this area (MSO#17). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0036B - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-111 (O-14-028)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*ND 514. Multiple cables can also cause spurious operation. Valve 2ND VA0004B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (2ND VA0019A or 2ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valves 2ND-19A, 2ND-4B, 2NI-184B, 2NI-185A, and 2FW-27A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2ND-4B and 2NI-184B, is located in the affected area. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0004B - 2B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-113 (OE-14-062)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*ND 514. Valve 2ND VA0004B is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (2ND VA0019A or 2ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2ND VA0004B - 2B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-114 (O-14-028)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*ND 504. Cables 2*ND 505 or 2*NI 505 can also cause spurious operation. Valve 2ND VA0019A is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (2ND VA0019A or 2ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valves 2ND-19A, 2ND-4B, 2NI-184B, 2NI-185A, and 2FW-27A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2ND-4B and 2NI-184B, is located in the affected area. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0019A - 2A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-115 (OE-14-002)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*ND 504. Valve 2ND VA0019A is required closed to mitigate FWST drain down to the containment sump (MSO #14). One of the valves (2ND VA0019A or 2ND VA0004B) is required open depending on which train is used for Reactor Heat Removal. Both valves have IN 92-18 concerns in both directions. Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2ND VA0019A - 2A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-14-116 (O-14-028)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NI 510. Cables 2*ATC 301, 2*FW 562 or 2*NI 918 can also cause spurious operation. Valve 2NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2ND-19A, 2ND-4B, 2NI-184B, 2NI-185A, and 2FW-27A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2ND-4B and 2NI-184B, is located in the affected area. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-117 (OE-14-063)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NI 510. Valve 2NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve not evaluated in calc MCC 1205.19-00-0084. This failure condition may challenge the 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.
Component(s)	2NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-118 (OP-14-061)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NI 510. Cables 2*ATC 301, 2*FW 562 or 2*NI 918 can also cause spurious operation. Valve 2NI VA0184B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, 2NS-20A, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2NS-1B, 2NS-3B, and 2NI-184B, is located in the affected area. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0184B - Reactor Building Sump to B Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-119 (O-14-028)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NI 505. Cables 2*ATC 2102 or 2*ATC 2104 can also cause spurious operation. Valve 2NI VA0185A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2ND-19A, 2ND-4B, 2NI-184B, 2NI-185A, and 2FW-27A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2ND-4B and 2NI-184B, is located in the affected area. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-120 (OE-14-010)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NI 505. Valve 2NI VA0185A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-121 (OP-14-061)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NI 505. Cables 2*ATC 2102 or 2*ATC 2104 can also cause spurious operation. Valve 2NI VA0185A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, 2NS-20A, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2NS-1B, 2NS-3B, and 2NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NI VA0185A - Reactor Building Sump to A Train Residual Heat Removal and Containment Spray Pumps
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-122 (OE-14-065)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 567. Valve 2NS VA0001B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve can fail as follows: Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2NS VA0001B - 2B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-123 (OP-14-061)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 567. Cables 2*NI 510, 2*NS 544 or 2*NS 568 can also cause spurious operation. Valve 2NS VA0001B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, 2NS-20A, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2NS-1B, 2NS-3B, and 2NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0001B - 2B Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-124 (OE-14-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 568. Valve 2NS VA0003B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve fails as follows: If valve stalls in the OPEN direction, no damage should occur. Should be able to manually CLOSE valve. If valve stalls in the CLOSE direction, structural limit will be exceeded, probably will result in not being able to reopen (Reference MCC 1205.19-00-0084). Valve may be closed depending on failure. This failure condition may challenge the 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.
Component(s)	2NS VA0003B - 2B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-125 (OP-14-061)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 568. Cables 2*NS 544 or 2*NS 567 can also cause spurious operation. Valve 2NS VA0003B is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2NS-1B, 2NS-3B, 2NS-18A, 2NS-20A, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2NS-1B, 2NS-3B, and 2NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0003B - 2B Containment Spray Pump suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-126 (OE-14-004)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 511. Valve 2NS VA0018A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve fails as follows: If actuator stalls in the OPEN direction, internal valve damage will occur. If actuator stalls in the CLOSE direction, actuator may be used to OPEN valve depending how deeply the disc is wedged into the seat (Reference MCC 1205.19-00-0084). Failure depends on spurious close or open and position needed. If valve fails to the open position, a replacement of the valve may be required. This failure condition may challenge the 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.
Component(s)	2NS VA0018A - 2A Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-127 (OP-14-061)
VFDR	This component, which is normally closed, required closed for HSB, is affected by he following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 511. Valve 2NS VA0018A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2NS-1B, 2NS -3B, 2NS-18A, 2NS-20A, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2NS-1B, 2NS-3B, and 2NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0018A - 2A Containment Spray Pump Suction from Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-128 (OE-14-012)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 512. Valve 2NS VA0020A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valve fails as follows: No structural limit exceeded, should be able to OPEN and CLOSE valve manually [OPEN depends on how deeply the disc is wedged into the valve seat] (Reference MCC 1205.19-00-0084). Valve may be repositioned depending on failure. This failure condition may challenge the 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.
Component(s)	2NS VA0020A - 2A Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-129 (OP-14-061)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*NS 512. Valve 2NS VA0020A is required closed to mitigate FWST drain down to the containment sump (MSO #14). Valves 2NS-1B, 2NS -3B, 2NS-18A, 2NS-20A, 2NI-184B, and 2NI-185A have cable failures that may cause spurious operation and IN 92-18 concerns. Power supply 2EMXB1, which provides power to 2NS-1B, 2NS-3B, and 2NI-184B, is located in the affected area. Spurious opening of these valves could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is normally closed, required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0020A - 2A Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-133 (O-14-028)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2ND VA00019A, 2ND VA0004B, and 2FW VA0027A may spuriously open and have IN 92-18 concerns. This could cause inadvertent FWST depletion to the containment sump (MSO #14). This situation may lead to the flooding of the containment sump. Also power supply 2EMXB1, which provides power to 2ND-4B and 2NI-184B, is located in the affected area. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-134 (OP-14-061)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. Valves 2NI VA0184B, 2NI VA0185A, 2NS VA0001B, 2NS VA0003B, 2NS VA0018A, and 2NS VA0020A may spuriously open and have IN 92-18 concerns. Spurious opening of valves could cause inadvertent FWST depletion to the containment sump (MSO #14). Also power supply 2EMXB1, which provides power to 2NS-1B, 2NS-3B, and 2NI-184B, is located in the affected area. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by ND or NS alignment from the FWST to the sump that results in containment flooding. Valve could be flooded out. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-135 (OP-14-036)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0205 - 2C Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-136 (OP-14-036)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0206 - 2B Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-137 (OP-14-036)
VFDR	This component, which is normally closed, required open for HSB, is affected by the following: Valves 2RC VA0205, 2RC VA0206 and 2RC VA0207 are manual valves. A manual action is required to open one of these valves located in the Turbine Building to provide an assured vent path. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	2RC VA0207 - 2A Main Condenser Pipe Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-138 (PH-14-046)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0083 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0083 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0078 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0078 or 2SM VA0083 is required closed. Valve 2SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0083 - A Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-139 (PH-14-047)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0089 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0089 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0084 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0084 or 2SM VA0089 is required closed. Valve 2SM VA0083 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0089 - B Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-140 (PH-14-048)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0095 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0095 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0090 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0090 or 2SM VA0095 is required closed. Valve 2SM VA0095 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0095 - C Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-141 (PH-14-049)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. Valve 2SM VA0101 will remain open as long as air to the valve remains available and valve remains energized. Switch to de-energize 2SM VA0101 is in the main control room. Transfer to the SSF has already occurred. Valve 2SM VA0096 fails open on loss of power to 2ELNPNTL6 or loss of air. Power supply 2ELNPNTL6, which feeds both of these valves, is non-diesel backed. Either valve 2SM VA0096 or 2SM VA0101 is required closed. Valve 2SM VA0101 is assured closed by failing instrument air to the valve. This failure condition may 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 pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM VA0101 - D Main Steam Line Drain Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-143 (OE-14-075)
VFDR	This component, which is normally closed, required closed for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cables 2*NS 526 or 2*NS 528. Valve 2NS VA0038B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valve can fail as follows: If valve stalls in the OPEN direction, no damage should occur. Should be able to manually CLOSE valve. If valve stalls in the CLOSE direction, structural limit will be exceeded and probably will result in not being able to reopen (Reference MCC 1205.19-00-0084). Valve is required to be closed. Therefore if the valve fails to the open position, should be able to manually close the valve. This failure condition may challenge the 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.
Component(s)	2NS VA0038B - 2B Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-151 (OP-14-067)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*FW 509. Cable 2*ATC 601 can also cause spurious operation. 2 FW VA0027A is also subject to loss of power. Valve 2FW VA0027A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 2NS VA0043A has a cable failure that may spuriously operate the valve. Valve 2NS VA0038B has cable failures that may cause spurious operation and IN 92-18. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-152 (OP-14-067)
VFDR	This component, which is normally off, required off for HSB, is affected by possible spurious operation from failure of cable 2*ILE 664 or interlock failure. Pump 2ND PU0001 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 2NS VA0043A has a cable failure that may spuriously operate the valve. Valve 2NS VA0038B has cable failures that may cause spurious operation and IN 92-18. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND PU0001 - 2A Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-153 (OP-14-067)
VFDR	This component, which is normally off, required off for HSB, is affected by possible start due to interlock failure. Pump 2ND PU0002 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 2NS VA0043A has a cable failure that may spuriously operate the valve. Valve 2NS VA0038B has cable failures that may cause spurious operation and IN 92-18. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND PU0002 - 2B Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-154 (OP-14-067)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*ND 514. Multiple cables can also cause spurious operation. Valve 2ND VA0004B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 2NS VA0043A has a cable failure that may spuriously operate the valve. Valve 2NS VA0038B has cable failures that may cause spurious operation and IN 92-18. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0004B - 2B Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve

Attachment C

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action
VFDR ID	VFDR-14-155 (OP-14-067)
VFDR	This component, which is normally open, required closed for HSB, is affected by the following. A potential IN 92-18 concern exists due to spurious operation from failure of cable 2*ND 504. Cables 2*ND 505 or 2*NI 505 can also cause spurious operation. Valve 2ND VA0019A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 2NS VA0043A has a cable failure that may spuriously operate the valve. Valve 2NS VA0038B has cable failures that may cause spurious operation and IN 92-18. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2ND VA0019A - 2A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action
VFDR ID	VFDR-14-156 (OP-14-067)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A potential IN 92-18 concern due to spurious operation from failure of cables 2*NS 526 or 2*NS 528. Valve can also spuriously operate due to failure of cables 2*ATC 408 or 2*RN 542. Valve 2NS VA0038B is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 2NS VA0043A has a cable failure that may spuriously operate the valve. Valve 2NS VA0038B has cable failures that may cause spurious operation and IN 92-18. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0038B - 2B Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	14 (Unit 2) - Aux Building Common El 733	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-14-157 (OP-14-067)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 2*NS 543. Valve 2NS VA0043A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 2NS VA0043A has a cable failure that may spuriously operate the valve. Valve 2NS VA0038B has cable failures that may cause spurious operation and IN 92-18. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the ND or NS alignment from the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NS VA0043A - 2A Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-14-159 (OP-14-067)
VFDR	This component, which is normally closed, required closed for HSB, is affected by the following. A combination of the ND pump suction valves and 2FW VA0027A being open, the spurious start of the ND pumps (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valves could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). Valves 2FW VA0027A, 2ND VA00019A, and 2ND VA0004B have cable failures that may cause spurious operation and IN 92-18 concerns. Valve 2NS VA0043A has a cable failure that may spuriously operate the valve. Valve 2NS VA0038B has cable failures that may cause spurious operation and IN 92-18. The HSB concern would be the spurious operation of 2NV 1012C (Cable 2 NV 826) caused by flooding due to the spurious aux containment spray draining the FWST to the sump. This valve is required closed to assure that the credited SSF SSD path from the standby makeup pump is available for seal injection. This failure condition may challenge the 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.
Component(s)	2NV VA1012C - Standby Makeup Pump Discharge to Containment Sump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID: 15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms — **Fire Area Definition**
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description
802	Electrical Penet Room
803	Switchgear Room

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using B train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using B train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, B train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by B train feeding S/G C and D. Main feed is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train B) provided in the control room.	
6. Vital Auxiliaries	Normal Train B auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action

12. Reactor Building 10 CFR50 Appendix R III.G.2.a Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the omission of standard designed fire tested penetration seals in the three hour fire rated reactor building walls as required by Section III.G.2.a of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- The penetrations and seals are constructed of noncombustible material.
- The annulus areas have automatic suppression.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The reactor building walls are constructed of 3-foot thick reinforced concrete with silicone foam in the expansions joints.
- Automatic fire detection is provided on both sides of penetrations.
- Limited combustibles in areas.
- The dedicated safe shutdown system is available for safe shutdown should a fire damage normal safe shutdown system components near the subject penetration seals.

This deviation addresses the existing reactor building penetrations for the process piping, spare sleeves, HVAC ducts, and personnel access. In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Attachment C

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 04 Fire Protection Evaluation For Floor Blockouts With Free Area In Excess of 9 ft. sq. And Structural Framing Spans Exceeding 42 in. Without Cross Member Framing
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the floor blockouts regarding the framing support provided for the Silicone Foam free areas (largest rectangular area of Silicone Foam without penetrating items) exceeding 9 ft. sq. The penetrations are 750-26.0-1, 750-131.0-1, 767-2.0-1, and 767-156.0-2. These penetrations do not conform to typical details E-2 and/or F-5 of DPC 1435.00-00-0006. Each of the penetrations is located in a NRC committed 3-hour fire barrier. The calculation determined the penetrations identified are considered adequate for the area fire hazards, considering: • Area fire detection for FAs 13, 15, 16, 19, 20, 22, and 23 • Partial area automatic fire suppression for FA 13 • Fire Brigade response for FAs 13, 15, 16, 19, 20, 22, and 23 • Partial manual suppression (i.e. hose stations, extinguishers) for FAs 13, 15, 16, 19, 20, 22, and 23 • Manually actuated fog/mist sprinkler system for FAs 19 and 20 • Limited combustibles for FAs 13, 15, 16, 19, 20, 22, and 23. The ability to achieve and maintain safe shutdown is not compromised by the penetration seal and support framing provided for the penetrations of concern.

Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 05 Fire Protection Evaluation For Over Sized Pipe Penetration
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at ten (10) penetrations (716-16.1-12, 716-16.1-13, 2-716-108.1-6, 733-92.1-1, 733-92.1-2, 750-21.2-1, 750-35.1-1, 750-35.1-2, 750-35.1-3, and 750-178.1-10). These seal configurations do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. In each case, the pipe size and opening size exceeds the limitation of the associated typical detail design. Each of these penetrations is located in a NRC committed fire barrier. The calculation determined the penetration seals currently installed at penetrations identified are adequate for the hazard. In all cases the present seal configuration has been demonstrated as capable of providing a 3 hour F rating. Furthermore, applications in 1-1/2 hour rated barriers do not present realistic T rating concerns, due to the location of the seals and the fact that the 1-1/2 hour rated barriers are partial length walls (i.e., they do not provide complete separation of adjacent areas). Applications in 3 hour rated barriers do not result in T rating concerns due to the minimal increase in pipe size (12" actual vs. 10" qualified by test) and the fact that no exposed combustible materials are in contact with or adjacent to these penetrations. Therefore, a fire initiating in one area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, and postulated safe shutdown methods will not be adversely impacted for these plant areas.

Attachment C

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

Fire Area ID: 15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
802	Electrical Penet Room	None	E, R	E, R	Combustible Control: E Detection System, FA 15-17 Detection: E R Internal Wall: R
803	Switchgear Room	None	R	R	Detection System, FA 15-17 Detection: R Internal Wall: R

Title Fire Risk Evaluation for Fire Area 15-17

Risk Summary The delta CDF value is above and the delta LERF value is at the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk but within the acceptance thresholds in RG 1.174. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [1] 2.90E-07

Δ LERF Units: [1] 1.00E-08

DID Maintained A review of defense in depth and risk evaluation results shows that Regulatory Guide 1.174 risk criteria are met and that the balance of defense in depth is maintained. Additional administrative controls would not provide appreciable benefit to the overall fire area risk. However, early detection of a fire from the installed detection system could allow fire brigade response sooner; therefore, fire detection is being required for Risk. In addtion, an internal wall between rooms is required to meet risk criteria. The FPRA did not credit the wall's rating, but the wall itself was relied on to limit the zone of influence for some scenarios. Provided the wall remains intact with no significant openings, the FPRA results are not affected. Given the actions required by the risk analysis and the DID assessment, the ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-15-17-01 (OE-15-17-008)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Any of the following cables 1*NC 522, 1*NC 525, 1*NC 908 can cause a spurious opening of the PORV. Any of the following cables 1*NC 520, 1*NC 537, 1*NC538 can cause a spurious operation of the block valve. Valve not evaluated in calc MCC 1205.19-00-0084. In addition, either cables 1*NC 520 or 1*NC 537 can cause a IN 92-18 concern on the block valve. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-02 (OP-15-17-002)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. This failure condition may 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.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-03 (OP-15-17-004)
VFDR	This component, which is normally off, required off for HSB, is affected by a loss of Train A power and the failure of numerous cables affecting 1CA VA0060A, 1CA VA0062A, and 1CA PU0001 such that they are unavailable to throttle flow. Manual valve 1CA VA0059 is available for local control. This is a potential overfill concern on unused Steam Generator 1A (MSO #29). This failure condition may 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.
Component(s)	1CA PU0001 - 1A Motor Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-15-17-04 (OP-15-17-004)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train A power and the failure of numerous cables affecting 1CA VA0060A, 1CA VA0062A, and 1CA PU0001 such that they are unavailable to throttle flow. Manual valve 1CA VA0059 is available for local control. This is a potential overfill concern on unused Steam Generator 1A (MSO #29). This failure condition may 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.
Component(s)	1CA VA0060A - 1A Auxiliary Feedwater Pump Discharge to 1A S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-15-17-05 (OP-15-17-004)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train A power and the failure of numerous cables affecting 1CA VA0060A, 1CA VA0062A, and 1CA PU0001 such that they are unavailable to throttle flow. Manual valve 1CA VA0059 is available for local control. This is a potential overfill concern on unused Steam Generator 1A (MSO #29). This failure condition may 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.
Component(s)	1CA VA0062A - 1A Auxiliary Feedwater Pump Discharge to 1A S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-15-17-06 (OP-15-17-005)
VFDR	This component, which is normally off, required off for HSB, is affected by a loss of Train A power and the failure of numerous cables affecting 1CA VA0056A, 1CA VA0058A, and 1CA PU0001 such that they are unavailable to throttle flow. Manual valve 1CA VA0055 is available for local control. This is a potential overfill concern on unused Steam Generator 1B (MSO #29). This failure condition may 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.
Component(s)	1CA PU0001 - 1A Motor Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-15-17-07 (OP-15-17-005)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train A power and the failure of numerous cables affecting 1CA VA0056A, 1CA VA0058A, and 1CA PU0001 such that they are unavailable to throttle flow. Manual valve 1CA VA0055 is available for local control. This is a potential overfill concern on unused Steam Generator 1B (MSO #29). This failure condition may 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.
Component(s)	1CA VA0056A - 1A Auxiliary Feedwater Pump Discharge to 1B S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-15-17-08 (OP-15-17-005)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train A power and the failure of numerous cables affecting 1CA VA0056A, 1CA VA0058A, and 1CA PU0001 such that they are unavailable to throttle flow. Manual valve 1CA VA0055 is available for local control. This is a potential overfill concern on unused Steam Generator 1B (MSO #29). This failure condition may 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.
Component(s)	1CA VA0058A - 1A Auxiliary Feedwater Pump Discharge to 1B S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-15-17-09 (OP-15-17-007)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cable 1*NC 971 which could spuriously open valves 1NC VA0272AC and 1NC VA0273AC. Either valve is required closed for NC inventory control (MSO #19). Note: this flow path has an orifice limiting flow. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0272AC - A Train Head Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-15-17-10 (OP-15-17-007)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cable 1*NC 971 which could spuriously open valves 1NC VA0272AC and 1NC VA0273AC. Either valve is required closed for NC inventory control (MSO #19). Note: this flow path has an orifice limiting flow. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0273AC - A Train Head Vent Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-11 (OP-15-17-009)
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of Train A power. FWST diversion to the NS system (MSO #15) may occur due spurious cable failures pertaining to U1 Train A Containment Spray Pump (cables 1*NS 547, 1*NS 570) and the outlet valves 1NS-29A (cable 1*NS 583) and 1NS-32A (cable 1*NS 583). This failure condition may challenge the 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.
Component(s)	1NS VA0020A - 1A Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-12 (OP-15-17-013)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-15-17-13 (OP-15-17-013)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may 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.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-14 (OP-15-17-014)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to cable failure. The letdown isolation and the letdown orifice valves (1NV-1A, 1NV-2A, 1NV-35A, 1NV-457A, 1NV-458A, and 1NV-459) have cable failures that may prevent the valves from closing, therefore letdown isolation cannot be accomplished. Valve 1NV-1A has a spurious concern due to failure of cable 1*NV 821. The remaining cable failures for 1NV-1A (1*BB 501, 1*NV 690, and 1*NV 822) and the cable failures for 1NV-2A (1*BB 501 and 1*NV 690) may cause a loss of power or control. Cable failures for valves 1NV-35A (1*NV 538), NV-457A (1*NV 534), and 1NV-458A (1*NV 536) may all cause spurious operation of their respective valves. 1NV VA0007B functions correctly for this fire area (MSO #6 and #7). This failure condition may challenge the 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.
Component(s)	1NV VA0001A - Unit 1 Reactor Coolant Letdown to Regenerative Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-15 (OP-15-17-014)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to cable failure. The letdown isolation and the letdown orifice valves (1NV-1A, 1NV-2A, 1NV-35A, 1NV-457A, 1NV-458A, and 1NV-459) have cable failures that may prevent the valves from closing. Therefore, letdown isolation cannot be accomplished. Valve 1NV-1A has a spurious concern due to failure of cable 1*NV 821. The remaining cable failures for 1NV-1A (1*BB 501, 1*NV 690, and 1*NV 822) and the cable failures for 1NV-2A (1*BB 501 and 1*NV 690) may cause a loss of power or control. Cable failures for valves 1NV-35A (1*NV 538), NV-457A (1*NV 534), and 1NV-458A (1*NV 536) may all cause spurious operation of their respective valves. 1NV VA0007B functions correctly for this fire area (MSO #6 and #7). This failure condition may challenge the 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.
Component(s)	1NV VA0002A - Unit 1 Reactor Coolant Letdown to Regenerative Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-15-17-16 (OP-15-17-015)
VFDR	This component, which is normally open, required open for HSB, is affected by failure of cable 1NV 859. A hot-short in cable 1NV 859 could potentially energized solenoid 1NV SV2380, which would transfer manual control of valve 1NV VA0238 to the Auxiliary Shutdown Panel. Valve 1NV VA0238 would be required to be operated from the Auxiliary Shutdown Panel. This failure condition may challenge the 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.
Component(s)	1NV VA0238 - Charging Line Flow Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-17 (OP-15-17-020)
VFDR	This component, which is normally cycled, required off for HSB, is affected by spurious actuation due to failure of cables 1ILE 648 and 1ILE 651. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRC - Pressurizer Heater Group 1C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-18 (OP-15-17-029)
VFDR	This component, which is normally cycled, required off for HSB, is affected by numerous cable failures which can cause spurious operation, loss of control, or loss of power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRA - Backup Pressurizer Heater Group 1A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-19 (O-15-17-007)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 1A or 1B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 1 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCA1) and Pressurizer Heater B (DCB1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater Group 1A is unavailable due to cable failures and/or loss of Train A power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-15-17-20 (OP-15-17-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0026AB - 1D S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-15-17-21 (OP-15-17-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0028AB - 1C S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-15-17-22 (OP-15-17-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0030AB - 1B S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-15-17-23 (OP-15-17-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0035AB - 1A S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-15-17-24 (OP-15-17-031)
VFDR	This component, which is normally off, required off for HSB, is affected by the inability to assure that 1CA PU0003 can be tripped from the Control Room via 1SA-48ABC and 1SA-49AB. The concern is to prevent a S/G overfill condition. Valves 1SA-48ABC and 1SA-49AB may receive a blackout signal or an SSPS signal, which can fail the valves open (de-energize valve solenoids) and start the TDCA Pump. The loss of Train A power and the failure of numerous cables affect 1CA VA0052AB, 1CA VA0054AC, 1CA VA0064AB, and 1CA VA0066AC such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generators 1A and 1B. This failure condition may 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.
Component(s)	1CA PU0003 - Unit 1 Turbine Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-15-17-25 (OP-15-17-033)
VFDR	This component, which is normally on, required off for HSB, is affected by the inability to ensure closure of the NC Spray valves. 1NC PU0001 and 1NC PU0002 are required to be tripped OR spray valves 1NC VA0027C and 1NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures (1 NC 974, 1 NC 977, 1 NC 980, and 1 NC 1210) in the solenoid circuitry and cable failures (1 NC 706 and 1 NC 707) in the E/P circuits. Cable failures in the solenoid circuit may fail the Pressurizer Spray Valves open. A loss of power to the E/P circuit will fail the valves to their required (closed) position. However, cable failures directly to the E/P may prevent the valves from closing, thus making the M/A station in the Control Room incapable of controlling the valves. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0001 - 1A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-26 (OP-15-17-033)
VFDR	This component, which is normally on, required off for HSB, is affected by the inability to ensure closure of the NC Spray valves. 1NC PU0001 and 1NC PU0002 are required to be tripped OR spray valves 1NC VA0027C and 1NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures (1 NC 974, 1 NC 977, 1 NC 980, and 1 NC 1210) in the solenoid circuitry and cable failures (1 NC 706 and 1 NC 707) in the E/P circuits. Cable failures in the solenoid circuit may fail the Pressurizer Spray Valves open. A loss of power to the E/P circuit will fail the valves to their required (closed) position. However, cable failures directly to the E/P may prevent the valves from closing, thus making the M/A station in the Control Room incapable of controlling the valves. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC PU0002 - 1B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-15-17-27 (OP-15-17-033)
VFDR	This component, which is normally open, required closed for HSB, is affected by the inability to ensure closure of the NC Spray valves. 1NC PU0001 and 1NC PU0002 are required to be tripped OR spray valves 1NC VA0027C and 1NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures (1 NC 974, 1 NC 977, 1 NC 980, and 1 NC 1210) in the solenoid circuitry and cable failures (1 NC 706 and 1 NC 707) in the E/P circuits. Cable failures in the solenoid circuit may fail the Pressurizer Spray Valves open. A loss of power to the E/P circuit will fail the valves to their required (closed) position. However, cable failures directly to the E/P may prevent the valves from closing, thus making the M/A station in the Control Room incapable of controlling the valves. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0027C - A Loop Pressurizer Spray Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-28 (OP-15-17-033)
VFDR	This component, which is normally open, required closed for HSB, is affected by the inability to ensure closure of the NC Spray valves. 1NC PU0001 and 1NC PU0002 are required to be tripped OR spray valves 1NC VA0027C and 1NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures (1 NC 974, 1 NC 977, 1 NC 980, and 1 NC 1210) in the solenoid circuitry and cable failures (1 NC 706 and 1 NC 707) in the E/P circuits. Cable failures in the solenoid circuit may fail the Pressurizer Spray Valves open. A loss of power to the E/P circuit will fail the valves to their required (closed) position. However, cable failures directly to the E/P may prevent the valves from closing, thus making the M/A station in the Control Room incapable of controlling the valves. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0029C - B Loop Pressurizer Spray Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-15-17-29 (OP-15-17-035)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Any of the following cables - 1*NC 522, 1*NC 525, 1*NC 908 - can cause a spurious opening of the PORV. Any of the following cables 1*NC 520, 1*NC 537, 1*NC 538 can cause a spurious operation of the block valve. In addition, either cables 1*NC 520 or 1*NC 537 can cause a IN 92-18 concern on the block valve (MSO #18). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	15-17 - Unit 1 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-15-17-30 (OP-15-17-035)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation. Any of the following cables -1*NC 522, 1*NC 525, 1*NC 908 - can cause a spurious opening of the PORV. Any of the following cables 1*NC 520, 1*NC 537, 1*NC 538 can cause a spurious operation of the block valve. In addition, either cables 1*NC 520 or 1*NC 537 can cause a IN 92-18 concern on the block valve (MSO #18). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0034A - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
804	Electrical Penet Room
805	Switchgear Room

Attachment C

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using B train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using B train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, B train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by B train feeding S/G C and D. Main feed is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train B) provided in the control room.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train B auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action

12. Reactor Building 10 CFR50 Appendix R III.G.2.a Deviations

Licensing Basis

Deviation request per the 08/03/1984 Duke letter to the NRC provides the following justification for the omission of standard designed fire tested penetration seals in the three hour fire rated reactor building walls as required by Section III.G.2.a of Appendix R, which was approved by the NRC in a letter dated 5/15/1989:

- The penetrations and seals are constructed of noncombustible material.
- The annulus areas have automatic suppression.
- Manual suppression (portable extinguishers and hose stations) are available for fire brigade response.
- The reactor building walls are constructed of 3-foot thick reinforced concrete with silicone foam in the expansions joints.
- Automatic fire detection is provided on both sides of penetrations.
- Limited combustibles in areas.
- The dedicated safe shutdown system is available for safe shutdown should a fire damage normal safe shutdown system components near the subject penetration seals.

This deviation addresses the existing reactor building penetrations for the process piping, spare sleeves, HVAC ducts, and personnel access. In conclusion, the bases for previous acceptability remain valid as substantiated by field walkdown.

Attachment C

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 04 Fire Protection Evaluation For Floor Blockouts With Free Area In Excess of 9 ft. sq. And Structural Framing Spans Exceeding 42 in. Without Cross Member Framing
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the floor blockouts regarding the framing support provided for the Silicone Foam free areas (largest rectangular area of Silicone Foam without penetrating items) exceeding 9 ft. sq. The penetrations are 750-26.0-1, 750-131.0-1, 767-2.0-1, and 767-156.0-2. These penetrations do not conform to typical details E-2 and/or F-5 of DPC 1435.00-00-0006. Each of the penetrations is located in a NRC committed 3-hour fire barrier. The calculation determined the penetrations identified are considered adequate for the area fire hazards, considering: • Area fire detection for FAs 13, 15, 16, 19, 20, 22, and 23 • Partial area automatic fire suppression for FA 13 • Fire Brigade response for FAs 13, 15, 16, 19, 20, 22, and 23 • Partial manual suppression (i.e. hose stations, extinguishers) for FAs 13, 15, 16, 19, 20, 22, and 23 • Manually actuated fog/mist sprinkler system for FAs 19 and 20 • Limited combustibles for FAs 13, 15, 16, 19, 20, 22, and 23. The ability to achieve and maintain safe shutdown is not compromised by the penetration seal and support framing provided for the penetrations of concern.

Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 05 Fire Protection Evaluation For Over Sized Pipe Penetration
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the non-standard penetration seal configurations presently installed at ten (10) penetrations (716-16.1-12, 716-16.1-13, 2-716-108.1-6, 733-92.1-1, 733-92.1-2, 750-21.2-1, 750-35.1-1, 750-35.1-2, 750-35.1-3, and 750-178.1-10). These seal configurations do not fully conform to a qualified 3-hour fire rated typical detail design from DPC 1435.00-00-0006, and therefore, must be evaluated. In each case, the pipe size and opening size exceeds the limitation of the associated typical detail design. Each of these penetrations is located in a NRC committed fire barrier. The calculation determined the penetration seals currently installed at penetrations identified are adequate for the hazard. In all cases the present seal configuration has been demonstrated as capable of providing a 3 hour F rating. Furthermore, applications in 1-1/2 hour rated barriers do not present realistic T rating concerns, due to the location of the seals and the fact that the 1-1/2 hour rated barriers are partial length walls (i.e., they do not provide complete separation of adjacent areas). Applications in 3 hour rated barriers do not result in T rating concerns due to the minimal increase in pipe size (12" actual vs. 10" qualified by test) and the fact that no exposed combustible materials are in contact with or adjacent to these penetrations. Therefore, a fire initiating in one area will be contained to the area of origin by existing structural components of the plant, including these penetration seals, and postulated safe shutdown methods will not be adversely impacted for these plant areas.

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0013, Sect. 9.4.08 Fire Protection Code Deviations
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluated the detector placement of one detector in Unit 2 Electrical Penetration Room. The calculation determined the system is considered adequate for the hazard based on the following: • Nature of combustibles in area • Room geometry. Further, there are no safe shutdown or safety related components in the area.

Attachment C

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

Fire Area ID: 16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
804	Electrical Penet Room	None	E, R	E, R	Combustible Control: E Detection System, FA 16-18 Detection: E R Internal Wall: R
805	Switchgear Room	None	R	R	Detection System, FA 16-18 Detection: R Internal Wall: R

Title Fire Risk Evaluation for Fire Area 16-18

Risk Summary The delta CDF and delta LERF are above the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk but within the acceptance thresholds in RG 1.174. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [2] 8.60E-07

Δ LERF Units: [2] 3.90E-08

DID Maintained A review of defense in depth and risk evaluation results shows that Regulatory Guide 1.174 risk criteria are met and that the balance of defense in depth is maintained. The risk Regulatory Guide 1.174 acceptance criteria are met with margin to account for analytical methods associated with fire scenarios. Administrative controls would not provide appreciable benefit to the overall fire area risk. However, early detection of a fire from the installed detection system could allow fire brigade response sooner, therefore, fire detection is being required for Risk. In addtion, an internal wall between rooms is required to meet risk criteria. The FPRA did not credit the wall's rating, but the wall itself was relied on to limit the zone of influence for some scenarios. Provided the wall remains intact with no significant openings, the FPRA results are not affected. Given the actions required by the risk analysis and the DID assessment, the ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-01 (OP-16-18-022)
VFDR	This component, which is normally on, required on for HSB, is affected by the loss of U2 Train A power. Loss of EVCC will result in cascading power losses affecting power to required Pressurizer level monitoring loop (2NC P 5172) and S/G 2C pressure monitoring loop (2SM P 5160). This failure condition may challenge 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.
Component(s)	0EPLBCEVCC - EVCC Battery Charger
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-02 (OP-16-18-021)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-03 (OP-16-18-021)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-04 (OP-16-18-040)
VFDR	This component, which is normally off, required off for HSB, is affected by the inability to assure that 2CA PU0003 can be tripped from the Control Room via 2SA-48ABC and 2SA-49AB. The concern is to prevent a S/G overfill condition. Valves 2SA-48ABC and 2SA-49AB may receive a blackout signal or an SSPS signal, which can fail the valves open (de-energize valve solenoids) and start the TDCA Pump. The loss of Train A power and the failure of numerous cables affect 2CA VA0052AB, 2CA VA0054AC, 2CA VA0064AB, and 2CA VA0066AC such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generators 2A and 2B. Also, failure of cables will spuriously actuate 2CA VA0038B on credited S/G 2D. This failure condition may 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.
Component(s)	2CA PU0003 - Unit 2 Turbine Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-05 (OP-16-18-001)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. Power supply 2EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-06 (OE-16-18-006)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cables 2*CA 527 and 2*CA 548. Valve not evaluated in calc MCC 1205.19-00-0084. This failure condition may 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.
Component(s)	2CA VA0042B - 2B Auxiliary Feedwater Pump Discharge to 2D S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-07 (OP-16-18-008)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train A power and the failure of numerous cables affecting 2CA VA0056A, 2CA VA0058A, and 2CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 2B (MSO #29). This failure condition may 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.
Component(s)	2CA VA0056A - 2A Auxiliary Feedwater Pump Discharge to 2B S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-08 (OP-16-18-008)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train A power and the failure of numerous cables affecting 2CA VA0056A, 2CA VA0058A, and 2CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 2B (MSO #29). This failure condition may 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.
Component(s)	2CA VA0058A - 2A Auxiliary Feedwater Pump Discharge to 2B S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-09 (OP-16-18-007)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train A power and the failure of numerous cables affecting 2CA VA0060A, 2CA VA0062A, and 2CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 2A (MSO #29). This failure condition may 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.
Component(s)	2CA VA0060A - 2A Auxiliary Feedwater Pump Discharge to 2A S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-10 (OP-16-18-007)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train A power and the failure of numerous cables affecting 2CA VA0060A, 2CA VA0062A, and 2CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 2A (MSO #29). This failure condition may 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.
Component(s)	2CA VA0062A - 2A Auxiliary Feedwater Pump Discharge to 2A S/G Inlet Isolation
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-11 (OP-16-18-039)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0026AB - 2D S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-12 (OP-16-18-039)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0028AB - 2C S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-13 (OP-16-18-039)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0030AB - 2B S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-14 (OP-16-18-039)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0035AB - 2A S/G Feedwater Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-15 (OP-16-18-038)
VFDR	This component, which is normally cycled, required off for HSB, is affected by numerous cable failures which can cause spurious operation, loss of control, or loss of power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRA - Backup Pressurizer Heater Group 2A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-16 (OP-16-18-004)
VFDR	This component, which is normally cycled, required off for HSB, is affected by spurious actuation due to failure of cables 2ILE 653 and 2ILE 667. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRC - Pressurizer Heater Group 2C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-17 (O-16-18-010)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 2A or 2B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 2 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCB1) and Pressurizer Heater B (DCA1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater Group 2A is unavailable due to cable failures and/or loss of Train A power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-18 (OP-16-18-022)
VFDR	This component, which is normally available, required available for HSB, is affected by the loss of U2 Train A power. Loss of EVCC will result in cascading power losses affecting power to required Pressurizer level monitoring loop (2NC P 5172). This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC P 5172 - Pressurizer Level CH.#3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-19 (OP-16-18-027)
VFDR	This component, which is normally on, required off for HSB, is affected by the inability to ensure closure of the NC Spray valves. 2NC PU0001 and 2NC PU0002 are required to be tripped OR spray valves 2NC VA0027C and 2NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures (2 NC 857, 2 NC 858, 2 NC 859, and 2 NC 1070) in the solenoid circuitry and cable failures (2 NC 628 and 2 NC 630) in the E/P circuits. Cable failures in the solenoid circuit may fail the Pressurizer Spray Valves open. A loss of power to the E/P circuit will fail the valves to their required (closed) position. However, cable failures directly to the E/P may prevent the valves from closing, thus making the M/A station in the Control Room incapable of controlling the valves. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0001 - 2A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-20 (OP-16-18-027)
VFDR	This component, which is normally on, required off for HSB, is affected by the inability to ensure closure of the NC Spray valves. 2NC PU0001 and 2NC PU0002 are required to be tripped OR spray valves 2NC VA0027C and 2NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures (2 NC 857, 2 NC 858, 2 NC 859, and 2 NC 1070) in the solenoid circuitry and cable failures (2 NC 628 and 2 NC 630) in the E/P circuits. Cable failures in the solenoid circuit may fail the Pressurizer Spray Valves open. A loss of power to the E/P circuit will fail the valves to their required (closed) position. However, cable failures directly to the E/P may prevent the valves from closing, thus making the M/A station in the Control Room incapable of controlling the valves. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0002 - 2B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-21 (OP-16-18-027)
VFDR	This component, which is normally open, required closed for HSB, is affected by the inability to ensure closure of the NC Spray valves. 2NC PU0001 and 2NC PU0002 are required to be tripped OR spray valves 2NC VA0027C and 2NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures (2 NC 857, 2 NC 858, 2 NC 859, and 2 NC 1070) in the solenoid circuitry and cable failures (2 NC 628 and 2 NC 630) in the E/P circuits. Cable failures in the solenoid circuit may fail the Pressurizer Spray Valves open. A loss of power to the E/P circuit will fail the valves to their required (closed) position. However, cable failures directly to the E/P may prevent the valves from closing, thus making the M/A station in the Control Room incapable of controlling the valves. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0027C - A Loop Pressurizer Spray Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-22 (OP-16-18-027)
VFDR	This component, which is normally open, required closed for HSB, is affected by the inability to ensure closure of the NC Spray valves. 2NC PU0001 and 2NC PU0002 are required to be tripped OR spray valves 2NC VA0027C and 2NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures (2 NC 857, 2 NC 858, 2 NC 859, and 2 NC 1070) in the solenoid circuitry and cable failures (2 NC 628 and 2 NC 630) in the E/P circuits. Cable failures in the solenoid circuit may fail the Pressurizer Spray Valves open. A loss of power to the E/P circuit will fail the valves to their required (closed) position. However, cable failures directly to the E/P may prevent the valves from closing, thus making the M/A station in the Control Room incapable of controlling the valves. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0029C - B Loop Pressurizer Spray Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-23 (OE-16-18-005)
VFDR	This component, which is normally open, required closed for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 2*NC 767 and 2*NC 775. Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-24 (OP-16-18-019)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Cable 2*NC 866 can cause a spurious opening of the PORV. Failure of cables 2*NC 767 and 2*NC 775 can cause a spurious operation of the block valve. In addition, either cables failure of cables 2*NC 767 and 2*NC 775 can cause a IN 92-18 concern on the block valve (MSO #18). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-25 (OP-16-18-019)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation. Cable 2*NC 866 can cause a spurious opening of the PORV. Failure of cables 2*NC 767 and 2*NC 775 can cause a spurious operation of the block valve. In addition, either cables failure of cables 2*NC 767 and 2*NC 775 can cause a IN 92-18 concern on the block valve (MSO #18). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0034A - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-26 (OP-16-18-035)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cable 2*NC 862 which could spuriously open valves 2NC VA0272AC and 2NC VA0273AC. Either valve is required closed for NC inventory control (MSO #19). Note: this flow path has an orifice limiting flow. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0272AC - Reactor Vessel Train A Head Vent Train Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-27 (OP-16-18-035)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cable 2*NC 862 which could spuriously open valves 2NC VA0272AC and 2NC VA0273AC. Either valve is required closed for NC inventory control (MSO #19). Note: this flow path has an orifice limiting flow. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0273AC - Reactor Vessel Train A Head Vent Train Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-28 (OP-16-18-011)
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of Train A power. FWST diversion to the NS system (MSO #15) may occur due to spurious cable failures pertaining to U2 Train A Containment Spray Pump (cables 2*NS 557, 2*NS 591) and the outlet valves 2NS-29A (cable 2*NS 600) and 2NS-32A (cable 2*NS 600). This failure condition may challenge the 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.
Component(s)	2NS VA0020A - 2A Containment Spray Pump Suction from Refueling Water Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-29 (OP-16-18-018)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to cable failure. The Letdown Isolation and the Letdown Orifice valves (2NV-1A, 2NV-2A, 2NV-35A, 2NV-457A, 2NV-458A, and 2NV-459) have cable failures that may prevent the valves from closing. Therefore, letdown isolation cannot be accomplished. Valves 2NV-1A and 2NV-2A have a spurious concern due to failure of cable 2*NV 552. The remaining cable failures for 2NV-1A (2*BB 505, 2*NV 840, and 2*NV 841) and the cable failure for 2NV-2A (2*BB 505) may cause a loss of power or control. Cable failures for valves 2NV-35A (2*NV 756), 2NV-457A (2*NV 552), and 2NV-458A (2*NV 552) may all cause spurious operation of their respective valves. Cable 2*BB 505 may cause a loss of power or control for 2NV-35A, 2NV-457A, and 2NV-458A. The cables associated with 2NV-459 cause a loss of power and control to the valve positioner. 2NV VA0007B functions correctly for this fire area (MSO #6 and #7). This failure condition may challenge the 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.
Component(s)	2NV VA0001A - Reactor Coolant Letdown to Regenerative Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-30 (OP-16-18-018)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to cable failure. The Letdown Isolation and the Letdown Orifice valves (2NV-1A, 2NV-2A, 2NV-35A, 2NV-457A, 2NV-458A, and 2NV-459) have cable failures that may prevent the valves from closing. Therefore, letdown isolation cannot be accomplished. Valves 2NV-1A and 2NV-2A have a spurious concern due to failure of cable 2*NV 552. The remaining cable failures for 2NV-1A (2*BB 505, 2*NV 840, and 2*NV 841) and the cable failure for 2NV-2A (2*BB 505) may cause a loss of power or control. Cable failures for valves 2NV-35A (2*NV 756), 2NV-457A (2*NV 552), and 2NV-458A (2*NV 552) may all cause spurious operation of their respective valves. Cable 2*BB 505 may cause a loss of power or control for 2NV-35A, 2NV-457A, and 2NV-458A. The cables associated with 2NV-459 cause a loss of power and control to the valve positioner. 2NV VA0007B functions correctly for this fire area (MSO #6 and #7). This failure condition may challenge the 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.
Component(s)	2NV VA0002A - Reactor Coolant Letdown to Regenerative Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-16-18-31 (O-16-18-004)
VFDR	This component, which is normally open, required open for HSB, is affected by failure of cable 2NV 872. A hot-short in cable 2NV 872 could potentially energized solenoid 2NV SV2380, which would transfer manual control of valve 2NV VA0238 to the Auxiliary Shutdown Panel. Valve 2NV VA0238 would be required to be operated from the Auxiliary Shutdown Panel. This failure condition may challenge the 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.
Component(s)	2NV VA0238 - Charging Line Flow Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-32 (OP-16-18-022)
VFDR	This component, which is normally available, required available for HSB, is affected by the loss of U2 Train A power. Loss of EVCC will result in cascading power losses affecting power to required S/G 2C pressure monitoring loop (2SM P 5160). This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5160 - 2C S/G Steam Line Pressure Indication Ch #3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-33 (OP-16-18-020)
VFDR	This component, which is normally available, required available for HSB, is affected by the loss of U2 Train A power and failure of cable 2*SM 583. Also, the failure of cable 2*SM 586 fails 2SM P5190. Either 2SM P5170 or 2SM P5190 is required. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5170 - 2D S/G Steam Line Pressure Indication Ch #3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-34 (OP-16-18-020)
VFDR	This component, which is normally available, required available for HSB, is affected by the failure of cable 2*SM 586. Also, the loss of U2 Train A power and failure of cable 2*SM 583 fails 2SM P5170. Either 2SM P5170 or 2SM P5190 is required. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5190 - 2D S/G Steam Line Pressure Indication Ch #4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-16-18-35 (OP-16-18-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of control due to failure of cables 2*SM 519, 2*SM 538, 2*SM 598, and 2*SM 602. The affected cables are in the fire area. For 2SM VA0001AB and 2SM VA0007AB, the design of the MSIV's require two solenoid valves from either A or B Train to be de-energized in order to close the valves. The "Initiate/Reset" circuit for A and B Train is included off the same parallel path as one of the required solenoid valves. The concern is an impact to a conductor on part of the circuit that has the "Initiate/Reset" button will disable that function. In addition, the remaining parallel circuits that contain one solenoid valve from each electrical train (individually fused) will remain energized. Due to the impact to the "Initiate/Reset" part of the circuit there are no means to de-energize both solenoid valves of a single electrical train. This will keep the MSIV's from closing. (Non -Safety power associated with the normal open/close buttons from the control room are not credited in the deterministic analysis. Two of the four MSIVs have non-safety controls in the fire area.) Also, for 2SM VA0003ABC and 2SM VA0005AB the ability to close is affected by the above controls. This failure condition may 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.
Component(s)	2SM VA0001AB - D Main Steam Isolation Valve

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

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action	
VFDR ID	VFDR-16-18-36 (OP-16-18-024)	
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of control due to failure of cables 2*SM 519, 2*SM 538, 2*SM 598, and 2*SM 602. The affected cables are in the fire area. For 2SM VA0001AB and 2SM VA0007AB, the design of the MSIV's require two solenoid valves from either A or B Train to be de-energized in order to close the valves. The "Initiate/Reset" circuit for A and B Train is included off the same parallel path as one of the required solenoid valves. The concern is an impact to a conductor on part of the circuit that has the "Initiate/Reset" button will disable that function. In addition, the remaining parallel circuits that contain one solenoid valve from each electrical train (individually fused) will remain energized. Due to the impact to the "Initiate/Reset" part of the circuit there are no means to de-energize both solenoid valves of a single electrical train. This will keep the MSIV's from closing. (Non -Safety power associated with the normal open/close buttons from the control room are not credited in the deterministic analysis. Two of the four MSIVs have non-safety controls in the fire area.) Also, for 2SM VA0003ABC and 2SM VA0005AB the ability to close is affected by the above controls. This failure condition may 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.	
Component(s)	2SM VA0003ABC - C Main Steam Isolation Valve	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action	
VFDR ID	VFDR-16-18-37 (OP-16-18-024)	
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of control due to failure of cables 2*SM 519, 2*SM 538, 2*SM 598, and 2*SM 602. The affected cables are in the fire area. For 2SM VA0001AB and 2SM VA0007AB, the design of the MSIV's require two solenoid valves from either A or B Train to be de-energized in order to close the valves. The "Initiate/Reset" circuit for A and B Train is included off the same parallel path as one of the required solenoid valves. The concern is an impact to a conductor on part of the circuit that has the "Initiate/Reset" button will disable that function. In addition, the remaining parallel circuits that contain one solenoid valve from each electrical train (individually fused) will remain energized. Due to the impact to the "Initiate/Reset" part of the circuit there are no means to de-energize both solenoid valves of a single electrical train. This will keep the MSIV's from closing. (Non -Safety power associated with the normal open/close buttons from the control room are not credited in the deterministic analysis. Two of the four MSIVs have non-safety controls in the fire area.) Also, for 2SM VA0003ABC and 2SM VA0005AB the ability to close is affected by the above controls. This failure condition may 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.	
Component(s)	2SM VA0005AB - B Main Steam Isolation Valve	
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action	

Fire Area ID:	16-18 - Unit 2 Train A Electrical Penetration & Switchgear Rooms	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-16-18-38 (OP-16-18-024)
VFDR	This component, which is normally open, required closed for HSB, is affected by a loss of control due to failure of cables 2*SM 519, 2*SM 538, 2*SM 598, and 2*SM 602. The affected cables are in the fire area. For 2SM VA0001AB and 2SM VA0007AB, the design of the MSIV's require two solenoid valves from either A or B Train to be de-energized in order to close the valves. The "Initiate/Reset" circuit for A and B Train is included off the same parallel path as one of the required solenoid valves. The concern is an impact to a conductor on part of the circuit that has the "Initiate/Reset" button will disable that function. In addition, the remaining parallel circuits that contain one solenoid valve from each electrical train (individually fused) will remain energized. Due to the impact to the "Initiate/Reset" part of the circuit there are no means to de-energize both solenoid valves of a single electrical train. This will keep the MSIV's from closing. (Non -Safety power associated with the normal open/close buttons from the control room are not credited in the deterministic analysis. Two of the four MSIVs have non-safety controls in the fire area.) Also, for 2SM VA0003ABC and 2SM VA0005AB the ability to close is affected by the above controls. This failure condition may 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.
Component(s)	2SM VA0007AB - A Main Steam Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
803A	HVAC Equip Room

Attachment C

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using B train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using B train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, B train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by B train feeding S/G C and D. Main feed is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train B and some SSS) provided in the control room and SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train B auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID MCC-1435.03-00-0012, Att. 11 Fire Protection Evaluation For Floor Blockouts With Fiberboard Damming That Is Not Mechanically Secured

Revision

Inactive No

Functionally Equivalent No

Adequate for the Hazard Yes

Summary

This calculation evaluates the fire protection adequacy of the floor blockouts identified below regarding their ceramic fiberboard damming configuration:

750-10.0-2
767-11.0-1, -2, -3, -4
767-118.0-1, -2, -3, -4
767-119.0-1, -2, -3, -4
767-12.0-2
767-120.0-1, -2, -3, -4, -5
767-37.0-1, -2, -3, -4, -5
767-38.0-1, -2, -3, -4
767-39.0-1, -2, -3, -4
767-62.0-1, -3, -4
767-65.0-10, -14
767.66.0-1, -2, -3, -4
767-67.0-1, -2, -3, -4, -5
767-90.0-1, -2, -3, -4, -5
767-91.0-2, -3, -4
767-92.0-12, -13
767-95.0-1, -3, -4.

Each of these penetration seals is located in a NRC committed fire barrier. Rooms 803A and 805A are identified in the calculation as part of FAs 17 and 18 respectively. These rooms are now in FAs 17A and 18A.

The calculation determined the penetrations identified are adequate for the hazard to protect against fire propagation and the development of unacceptable unexposed side temperatures for a 3-hour duration. Fire propagation between interacting fire areas, through the described non-standard penetration seals identified, will not occur due to the following:

- level of fire resistance provided by the existing penetration seals,
- combustible controls in FAs 13, 17A, 18A, 19, 20, and 24,
- detection in FAs 13, 17A, 18A, 19, 20, and 24,
- fixed water suppression under cable trays at east and west ends of FA 13,
- fog/mist manual suppression system in FAs 19 and 20.

Therefore, the capability to achieve and maintain safe shutdown is not compromised by the penetrations identified.

Attachment C

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

Fire Area ID: 17A - Unit 1 Train A Switchgear HVAC Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
803A	HVAC Equip Room	None	E	E	Combustible Control: E Detection System, FA 17A Detection: E

Title Fire Risk Evaluation for Fire Area 17A

Risk Summary Assuming a compliant risk of 0.00, the delta CDF and delta LERF are above the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk, but within the acceptance thresholds in RG 1.174. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency. Given the relatively low risk for these zones/scenarios the delta risk is defined by the variant case risk, the compliant case risk is conservatively assumed to be 0.

Δ CDF Units: [1] 1.90E-07

Δ LERF Units: [1] 1.04E-08

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The risk acceptance criteria are met with margin to account for analytical methods associated with fire scenarios. The scenarios analyzed above are expected to bound potential fuel packages which can reasonably be expected to occur in this area. The analyzed scenarios are all related to hot work. Hot work procedures are adequate to ensure a fire will be promptly detected and suppressed. The administrative controls for hotwork reduce the potential for fire in this area. In the event of no intervention by the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the postulated hot work scenarios. The ability to meet nuclear safety performance criteria is
ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-01 (O-17A-008)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 1A or 1B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 1 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCA1) and Pressurizer Heater B (DCB1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater Group 1A is unavailable due to cable failures and/or loss of Train A power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRB - Backup Pressurizer Heater Group 1B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-02 (OP-17A-001)
VFDR	This component, which is normally open, required to cycle for HSB, is affected by an assumed loss of offsite power. Power supply 1EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 1CA VA0002 located in Fire Area TB1 is required to be manually closed prior to inventory depletion of the 1CA Storage Tank. This failure condition may 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.
Component(s)	1CA VA0002 - Unit 1 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-17A-03 (OP-17A-003)
VFDR	This component, which is normally open, required open for HSB, is affected by spurious operation due to failure of cable 1*ATC 201A. There is no immediate HSB concern due to the loss of the recirc path for the NV pump. This failure condition may challenge the 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.
Component(s)	1NV VA0151A - Unit 1 Charging Pump Recirc Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-04 (OP-17A-011)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-17A-05 (OP-17A-011)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (1CA P 5610) and 0EPFPNKXB (1CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-17A-06 (OP-17A-013)
VFDR	This component, which is normally off, required off for HSB, is affected by a loss of Train A power to 1CA VA0060A, 1CA VA0062A, and 1CA PU0001. Also, the failure of cables affect 1CA VA0062A and 1CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 1A (MSO #29). This failure condition may 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.
Component(s)	1CA PU0001 - 1A Motor Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-07 (OP-17A-013)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train A power to 1CA VA0060A, 1CA VA0062A, and 1CA PU0001. Also, the failure of cables affect 1CA VA0062A and 1CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 1A (MSO #29). This failure condition may 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.
Component(s)	1CA VA0060A - 1A Auxiliary Feedwater Pump Discharge to 1A S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-08 (OP-17A-013)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train A power to 1CA VA0060A, 1CA VA0062A, and 1CA PU0001. Also, the failure of cables affect 1CA VA0062A and 1CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 1A (MSO #29). This failure condition may 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.
Component(s)	1CA VA0062A - 1A Auxiliary Feedwater Pump Discharge to 1A S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-09 (OP-17A-014)
VFDR	This component, which is normally off, required off for HSB, is affected by a loss of Train A power and the failure of cables affecting 1CA VA0056A, 1CA VA0058A, and 1CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 1B (MSO #29). This failure condition may 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.
Component(s)	1CA PU0001 - 1A Motor Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-10 (OP-17A-014)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train A power and the failure of cables affecting 1CA VA0056A, 1CA VA0058A, and 1CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 1B (MSO #29). This failure condition may challenge the Decay Heat Removal Nuclear Safety Performance Criteria. his condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CA VA0056A - 1A Auxiliary Feedwater Pump Discharge to 1B S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-11 (OP-17A-014)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train A power and the failure of cables affecting 1CA VA0056A, 1CA VA0058A, and 1CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 1B (MSO #29). This failure condition may 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.
Component(s)	1CA VA0058A - 1A Auxiliary Feedwater Pump Discharge to 1B S/G Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-12 (OP-17A-017)
VFDR	This component, which is normally cycled, required off for HSB, is affected by spurious actuation due to failure of cable 1 ILE 648. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRC - Pressurizer Heater Group 1C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-13 (OP-17A-024)
VFDR	This component, which is normally stopped, required to run for HSB, is affected by the following: Cables for all channels of control room indication of certain parameters route through this area at the ceiling. The SSF diesel generator is required to be started and aligned to load center 1SLXG. This action is used only to power the charger to the batteries for SSF instrumentation required in this area and must be performed within 3 hours from the start of the fire and a loss of offsite power, given that the SSF battery is rated at 3 hours. Transfer to the SSF is not credited in this area. This failure condition may challenge 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.
Component(s)	0AD GE0005 - SSF Diesel Generator
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-14 (OP-17A-025)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM P 5140 - SG C Steam Line Pressure CH # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-15 (OP-17A-025)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM P 5150 - SG C Steam Line Pressure CH 2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-16 (OP-17A-025)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM P 5160 - SG C Steam Line Pressure CH # 3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-17 (OP-17A-026)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM P 5170 - SG D Steam Line Pressure CH # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-18 (OP-17A-026)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1SM P 5190 - SG D Steam Line Pressure CH # 4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-19 (OP-17A-027)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. Cables located in the fire area (1*NC 525 and 1*NC 942) can cause a spurious opening of the PORV (1NC VA0034A). Failure of cable 1*NC 538 can also spuriously open the Block Valve (1NC VA0033A) (MSO #18). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-20 (OP-17A-027)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation. Cables located in the fire area (1*NC 525 and 1*NC 942) can cause a spurious opening of the PORV (1NC VA0034A). Failure of cable 1*NC 538 can also spuriously open the Block Valve (1NC VA0033A) (MSO #18). This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC VA0034A - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-17A-21 (OP-17A-029)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0026AB - 1D S/G Feed water Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-22 (OP-17A-029)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0028AB - 1C S/G Feed water Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-23 (OP-17A-029)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0030AB - 1B S/G Feed water Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-24 (OP-17A-029)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	1CF VA0035AB - 1A S/G Feed water Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-25 (OP-17A-030)
VFDR	This component, which is normally off, required off for HSB, is affected by the inability to assure that 1CA PU0003 can be tripped from the Control Room via 1SA-48ABC and 1SA-49AB. Valves 1SA-48ABC and 1SA-49AB may receive a blackout signal or an SSPS signal, which can fail the valves open (de-energize valve solenoids) and start the TDCA Pump. The loss of Train A power affects 1CA VA0052AB, 1CA VA0054AC, 1CA VA0064AB, and 1CA VA0066AC. Also the failure of cables affect 1CA VA0052AB and 1CA VA0064AB such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generators 1A and 1B. This failure condition may 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.
Component(s)	1CA PU0003 - Unit 1 Turbine Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-26 (OP-17A-031)
VFDR	This component, which is normally cycled, required off for HSB, is affected by spurious actuation due to failure of cable 1*ILE 670. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1ILE-PZRHTRA - Backup Pressurizer Heater Group 1A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-17A-27 (OP-17A-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to cable failure. The letdown isolation and the letdown orifice valves (1NV-1A, 1NV-2A, 1NV-35A, 1NV-457A, and 1NV-458A) have cable failures that may prevent the valves from closing. Therefore, letdown isolation cannot be accomplished. The cable failures for 1NV-1A (1*NV 680 and 1*NV 690) and the cable failures for 1NV-2A (1*NV 680 and 1*NV 690) may cause a loss of power or control. Cable failures for valves 1NV-35A (1*NV 538), 1NV-457A (1*NV 534), and 1NV-458A (1*NV 536) may all cause spurious operation of their respective valves and the failure of cable 1*IPE 581 may cause a loss of power to the valves as well. 1NV VA0007B functions correctly for this fire area (MSO #6 and #7). This failure condition may challenge the 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.
Component(s)	1NV VA0001A - Unit 1 Reactor Coolant Letdown Isolation Valve to Regenerative Heat Exchanger
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-17A-28 (OP-17A-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to cable failure. The letdown isolation and the letdown orifice valves (1NV-1A, 1NV-2A, 1NV-35A, 1NV-457A, and 1NV-458A) have cable failures that may prevent the valves from closing. Therefore, letdown isolation cannot be accomplished. The cable failures for 1NV-1A (1*NV 680 and 1*NV 690) and the cable failures for 1NV-2A (1*NV 680 and 1*NV 690) may cause a loss of power or control. Cable failures for valves 1NV-35A (1*NV 538), 1NV-457A (1*NV 534), and 1NV-458A (1*NV 536) may all cause spurious operation of their respective valves and the failure of cable 1*IPE 581 may cause a loss of power to the valves as well. 1NV VA0007B functions correctly for this fire area (MSO #6 and #7). This failure condition may challenge the 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.
Component(s)	1NV VA0002A - Unit 1 Reactor Coolant Letdown Isolation Valve to Regenerative Heat Exchanger
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-29 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5490 - SG A Narrow Range Level CH. # 4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-30 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5500 - SG A Narrow Range Level CH. # 3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-31 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5510 - SG A Narrow Range Level CH. # 2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-32 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5520 - SG B Narrow Range Level CH. # 4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-33 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5530 - SG # B Narrow Range Level CH. # 3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-34 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5540 - SG B Narrow Range Level CH. # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-35 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5550 - SG C Narrow Range Level CH. # 4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-36 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5560 - SG C Narrow Range Level CH. # 3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-37 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5570 - SG C Narrow Range Level CH. # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-38 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5580 - SG D Narrow Range Level CH. # 4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-39 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5590 - SG D Narrow Range Level CH. # 3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-40 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 5600 - SG D Narrow Range Level CH. # 2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-41 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 6000 - SG D Narrow Range Level CH. # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-42 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 6010 - SG B Narrow Range Level CH. # 2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-43 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 6020 - SG C Narrow Range Level CH. # 2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-44 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1CF P 6030 - SG D Narrow Range Level CH. # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-45 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC P 5150 - Pressurizer Pressure CH #2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-46 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC P 5151 - Pressurizer Pressure CH #2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-47 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC P 5160 - Pressurizer Pressure CH #1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-48 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC P 5161 - Pressurizer Pressure CH #1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-49 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC P 5162 - Pressurizer Level Channel 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-50 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC P 5163 - Pressurizer Pressure Channel 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-51 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC P 5170 - Pressurizer Pressure CH #3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-52 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC P 5171 - Pressurizer Pressure CH #4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-53 (PH-17A-002)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	1NC P 5172 - Pressurizer Level CH #3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-54 (OP-17A-038)
VFDR	This component, which is normally closed, required to be cycled for HSB, is affected by spurious operation due to failure of cable 1*ATC 2201. The spurious opening of valves NI-9A or NI-10B along with the normal charging flowpath being open could starve seal injection flow. 1NV PU0015 gets a spurious start due to failure of cable 1*NV 658 and cannot be tripped from the control room. An assumed SSPS A(B) Safety Injection Signal may also open NI-9A(NI-10B). However, this same signal would close NV-244A (NV-245B) isolating the normal charging path. See MSO Scenario number 2 in calculation MCC-1435.00-00-0023. This failure condition may challenge the 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.
Component(s)	1NI VA0009A - Unit 1 Charging Pumps to Reactor Coolant Cold Legs Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-17A-55 (OP-17A-037)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of power. Valve 1FW VA0027A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 1FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valves 1FW VA0027A and 1ND VA00019A may lose power and remain open. 1NS VA0043A has a cable failure that may cause spurious operation. A HSB action is required to disable 1ND PU0001 by pulling the breaker control power fuses and locally tripping the breaker at the switchgear. This action will mitigate potential drain down of the FWST into the containment sump via the aux containment spray valves. This failure condition may challenge the 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.
Component(s)	1FW VA0027A - Refueling Water Storage Tank to Residual Heat Removal Pump Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-17A-56 (OP-17A-037)
VFDR	This component, which is normally off, required off for HSB, is affected by possible spurious operation from failure of cable 1*NV 658 or interlock failure. Pump 1ND PU0001 is required off to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 1FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valves 1FW VA0027A and 1ND VA00019A may lose power and remain open. 1NS VA0043A has a cable failure that may cause spurious operation. A HSB action is required to disable 1ND PU0001 by pulling the breaker control power fuses and locally tripping the breaker at the switchgear. This action will mitigate potential drain down of the FWST into the containment sump via the aux containment spray valves. This failure condition may challenge the 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.
Component(s)	1ND PU0001 - 1A Residual Heat Removal Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-17A-57 (OP-17A-037)
VFDR	This component, which is normally open, required closed for HSB, is affected by possible loss of power. Valve 1ND VA0019A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 1FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valves 1FW VA0027A and 1ND VA00019A may lose power and remain open. 1NS VA0043A has a cable failure that may cause spurious operation. A HSB action is required to disable 1ND PU0001 by pulling the breaker control power fuses and locally tripping the breaker at the switchgear. This action will mitigate potential drain down of the FWST into the containment sump via the aux containment spray valves. This failure condition may challenge the 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.
Component(s)	1ND VA0019A - 1A Residual Heat Removal Pump Suction from FWST or Reactor Coolant Loop Outside Containment Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-17A-58 (OP-17A-037)
VFDR	This component, which is normally closed, required closed for HSB, is affected by possible spurious operation from failure of cable 1*NS 524. Valve 1NS VA0043A is required closed to mitigate inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). A combination of the ND pump suction valve and 1FW VA0027A being open, the spurious start of the ND pump (due to interlock and/or cable failure), and spurious opening of the ND auxiliary containment spray valve could cause inadvertent FWST depletion to the containment sump via the containment spray ring (MSO #15a). This situation may lead to the flooding of the containment sump. Valves 1FW VA0027A and 1ND VA00019A may lose power and remain open. 1NS VA0043A has a cable failure that may cause spurious operation. A HSB action is required to disable 1ND PU0001 by pulling the breaker control power fuses and locally tripping the breaker at the switchgear. This action will mitigate potential drain down of the FWST into the containment sump via the aux containment spray valves. This failure condition may challenge the 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.
Component(s)	1NS VA0043A - 1A Residual Heat Removal Heat Exchanger Outlet to Containment Spray Containment Outside Isolation Valve

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

Fire Area ID:	17A - Unit 1 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Disposition Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID: 18A - Unit 2 Train A Switchgear HVAC Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Fire Area Definition

Room ID	Description
805A	HVAC Equip Area

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown from Main Control Room (MCR)	
1. Reactivity Control Function	Manual reactor trip from MCR. Shutdown margin maintained from the MCR by injection of borated water from FWST using B train charging pump via the normal charging flow path or seal injection flow path.	
2. Inventory Control Function	Inventory control from the MCR is maintained by isolating the reactor coolant system and using B train charging pump and the normal charging flow path or seal injection flow path. Borated water from FWST.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Reactor pressure control from the MCR using pressurizer code safeties, B train NC PORVs and blocks and manual control of heaters with NC system isolation assures pressure control.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Natural circulation of reactor coolant and main steam safeties. S/Gs are isolated. Auxiliary feedwater is supplied by B train feeding S/G C and D. Main feed is stopped and aux feed to unused S/Gs is controlled to prevent overfill.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring (Train B and some SSS) provided in the control room and SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Normal Train B auxiliary systems are used. This includes nuclear service water, component cooling water, switchgear, HVAC and diesel generators.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID Revision

MCC-1435.03-00-0012, Att. 11 Fire Protection Evaluation For Floor Blockouts With Fiberboard Damming That Is Not Mechanically Secured

Inactive

No

Functionally Equivalent

No

Adequate for the Hazard

Yes

Summary

This calculation evaluates the fire protection adequacy of the floor blockouts identified below regarding their ceramic fiberboard damming configuration:

750-10.0-2
767-11.0-1, -2, -3, -4
767-118.0-1, -2, -3, -4
767-119.0-1, -2, -3, -4
767-12.0-2
767-120.0-1, -2, -3, -4, -5
767-37.0-1, -2, -3, -4, -5
767-38.0-1, -2, -3, -4
767-39.0-1, -2, -3, -4
767-62.0-1, -3, -4
767-65.0-10, -14
767.66.0-1, -2, -3, -4
767-67.0-1, -2, -3, -4, -5
767-90.0-1, -2, -3, -4, -5
767-91.0-2, -3, -4
767-92.0-12, -13
767-95.0-1, -3, -4.

Each of these penetration seals is located in a NRC committed fire barrier. Rooms 803A and 805A are identified in the calculation as part of FAs 17 and 18 respectively. These rooms are now in FAs 17A and 18A.

The calculation determined the penetrations identified are adequate for the hazard to protect against fire propagation and the development of unacceptable unexposed side temperatures for a 3-hour duration. Fire propagation between interacting fire areas, through the described non-standard penetration seals identified, will not occur due to the following:

- level of fire resistance provided by the existing penetration seals,
- combustible controls in FAs 13, 17A, 18A, 19, 20, and 24,
- detection in FAs 13, 17A, 18A, 19, 20, and 24,
- fixed water suppression under cable trays at east and west ends of FA 13,
- fog/mist manual suppression system in FAs 19 and 20.

Therefore, the capability to achieve and maintain safe shutdown is not compromised by the penetrations identified.

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

Fire Area ID: 18A - Unit 2 Train A Switchgear HVAC Room
Compliance Basis: NFPA 805, Section 4.2.4.2 Performance Based

Room ID	Description	Required Suppression System	Required Detection System	Required Fire Protection Feature	Required Fire Protection Feature and System Details
805A	HVAC Equip Area	None	E	E	Combustible Control: E Detection System, FA 18A Detection: E

Title Fire Risk Evaluation for Fire Area 18A

Risk Summary Assuming a compliant risk of 0.00, the delta CDF is above and and delta LERF is below the screening acceptance criteria of 1E-07/rx-yr (CDF) and 1E-08/rx-yr (LERF) for acceptable risk, but within the acceptance thresholds in RG 1.174. All scenario CCDPs and CLERPs are less than 1.0 ensuring that the acceptance criteria is not solely met based on low fire ignition frequency.

Δ CDF Units: [2] 1.47E-07

Δ LERF Units: [2] 9.31E-09

DID Maintained A review of defense in depth and risk evaluation results show that risk acceptance criteria are met and that the balance of defense in depth is maintained. The risk acceptance criteria are met with margin to account for analytical methods associated with fire scenarios. Since the delta risk cannot exceed the total risk for the fire area, use of the total risk is a bounding estimate of delta risk and a compliant case is not required. The scenarios analyzed above are expected to bound potential fuel packages which can reasonably be expected to occur in this area. The analyzed scenarios are all related to hot work. Hot work procedures are adequate to ensure a fire will be promptly detected and suppressed. The administrative controls for hotwork reduce the potential for fire in this area. In the event of no intervention by the plant fire brigade, it is not expected that a credible fire would develop which would not be bounded by the postulated hot work scenarios. The ability to meet nuclear safety performance criteria is ensured.

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., UFSAR, supporting analyses) have been considered and provides sufficient margin to account for analysis and data uncertainty.

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-01 (O-18A-003)
VFDR	This component, which is normally open, required open for HSB, is affected by cable failure. Control of charging line flow control valve 2NV VA0238 is lost due to failure of cable 2 EIA 593 to manual loader. This failure condition may challenge the 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.
Component(s)	2NV VA0238 - Charging Line Flow Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-02 (O-18A-009)
VFDR	This component, which is normally cycled, required to be cycled for HSB, is affected by the following: Pressurizer Heater Groups 2A or 2B may be required to be operable in order to maintain the plant in a safe and stable condition. In order to assure power feed to the Unit 2 Pressurizer Heaters A and B, the associated vacuum contactor must remain energized. However, the power supplies for the vacuum contactors for Pressurizer Heater A (DCB1) and Pressurizer Heater B (DCA1) are not diesel backed and cannot be credited in the deterministic analysis. Pressurizer Heater Group 2A is unavailable due to cable failures and/or loss of Train A power. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRB - Backup Pressurizer Heater Group 2B
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-03 (OE-18A-001)
VFDR	This component, which is normally open, required closed for HSB, is affected by a potential IN 92-18 concern due to spurious operation from failure of cable 2*NC 775. Actuator stalling in the OPEN or CLOSE direction will result in internal valve damage. Any means of repositioning the valve will probably not be successful (Reference MCC 1205.19-00-0084). A replacement of the valve may be required. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-04 (OP-18A-002)
VFDR	This component, which is normally open, required to be cycled for HSB, is affected by an assumed loss of offsite power. Power supply 2EPDMXMXA is not diesel backed. Supply breaker to valve is open during normal operation. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. CA suction supply valve 2CA VA0002 located in Fire Area TB2 is required to be manually closed prior to inventory depletion of the 2CA Storage Tank. This failure condition may 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.
Component(s)	2CA VA0002 - Unit 2 Auxiliary Feedwater Pumps Suction from Auxiliary Feedwater Storage Tank Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-05 (OP-18A-008)
VFDR	This component, which is normally off, required to be off for HSB, is affected by a loss of Train A power to 2CA VA0060A, 2CA VA0062A, and 2CA PU0001. Also the failure of cables affect 2CA VA0060A and 2CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 2A (MSO #29). This failure condition may 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.
Component(s)	2CA PU0001 - 2A Motor Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-06 (OP-18A-008)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train A power to 2CA VA0060A, 2CA VA0062A, and 2CA PU0001. Also the failure of cables affect 2CA VA0060A and 2CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 2A (MSO #29). This failure condition may 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.
Component(s)	2CA VA0060A - 2A Auxiliary Feedwater Pump Discharge to 2A S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-07 (OP-18A-008)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train A power to 2CA VA0060A, 2CA VA0062A, and 2CA PU0001. Also the failure of cables affect 2CA VA0060A and 2CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 2A (MSO #29). This failure condition may 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.
Component(s)	2CA VA0062A - 2A Auxiliary Feedwater Pump Discharge to 2A S/G Inlet Isolation
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-08 (OP-18A-010)
VFDR	This component, which is normally off, required to be off for HSB, is affected by a loss of Train A power to 2CA VA0056A, 2CA VA0058A and 2CA PU0001. Also the failure of cables affect 2CA VA0056A and 2CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 2B (MSO #29). This failure condition may 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.
Component(s)	2CA PU0001 - 2A Motor Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-09 (OP-18A-010)
VFDR	This component, which is normally open, required open for HSB, is affected by a loss of Train A power to 2CA VA0056A, 2CA VA0058A and 2CA PU0001. Also the failure of cables affect 2CA VA0056A and 2CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 2B (MSO #29). This failure condition may 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.
Component(s)	2CA VA0056A - 2A Auxiliary Feedwater Pump Discharge to 2B S/G Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-10 (OP-18A-010)
VFDR	This component, which is normally open, required to be throttled for HSB, is affected by a loss of Train A power to 2CA VA0056A, 2CA VA0058A and 2CA PU0001. Also the failure of cables affect 2CA VA0056A and 2CA PU0001 such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generator 2B (MSO #29). This failure condition may 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.
Component(s)	2CA VA0058A - 2A Auxiliary Feedwater Pump Discharge to 2B S/G Inlet Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-11 (OP-18A-015)
VFDR	This component, which is normally cycled, required to be off for HSB, is affected by spurious actuation due to failure of cables 2*ILE 664, 2*ILE 1*ILE 678 and 2*ILE 679. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRA - Backup Pressurizer Heater Group 2A
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-12 (OP-18A-015)
VFDR	This component, which is normally cycled, required to be off for HSB, is affected by spurious actuation due to failure of cable 2 ILE 647. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2ILE-PZRHTRC - Pressurizer Heater Group 2C
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-13 (OP-18A-017)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cable 2*NC 862 which could spuriously open valves 2NC VA0272AC and 2NC VA0273AC. Either valve is required closed for NC inventory control (MSO #19). Note: this flow path has an orifice limiting flow. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0272AC - Reactor Vessel Train A Head Vent Train Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-14 (OP-18A-017)
VFDR	This component, which is normally closed, required closed for HSB, is affected by failure of cable 2*NC 862 which could spuriously open valves 2NC VA0272AC and 2NC VA0273AC. Either valve is required closed for NC inventory control (MSO #19). Note: this flow path has an orifice limiting flow. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0273AC - Reactor Vessel Train A Head Vent Train Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-15 (OP-18A-018)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5610 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-16 (OP-18A-018)
VFDR	This component, which is normally available, required available for HSB, is affected by an assumed loss of offsite power. Power supplies 0EPFPNKXA (2CA P 5610) and 0EPFPNKXB (2CA P 5620) are not diesel backed. This concern is not considered time critical due to volume of water in the CAST. This is approximately 18 hours per references in SLC 16.9.7. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CA P 5620 - Auxiliary Feedwater Storage Tank Level Indication
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-17 (OP-18A-019)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5140 - 2C S/G Steam Line Pressure Indication Ch #1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-18 (OP-18A-019)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5150 - 2C S/G Steam Line Pressure Indication Ch #2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-19 (OP-18A-019)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5160 - 2C S/G Steam Line Pressure Indication Ch #3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-20 (OP-18A-020)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5170 - 2D S/G Steam Line Pressure Indication Ch #1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-21 (OP-18A-020)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. Computer input cables 2 IKE 380 and 2 EIA 358 were selected because it could not be determined if computer input device PD/546 (MCM 2399.03-0161.001) provides adequate isolation. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2SM P 5190 - 2D S/G Steam Line Pressure Indication Ch #4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-22 (OP-18A-023)
VFDR	This component, which is normally stopped, required to run for HSB, is affected by the following: Cables for all channels of control room indication of certain parameters route through this area at the ceiling. The SSF diesel generator is required to be started and aligned to load center 1SLXG. This action is used only to power the charger to the batteries for SSF instrumentation required in this area and must be performed within 3 hours from the start of the fire and a loss of offsite power, given that the SSF battery is rated at 3 hours. Transfer to the SSF is not credited in this area. This failure condition may challenge 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.
Component(s)	0AD GE0005 - SSF Diesel Generator
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-23 (OP-18A-029)
VFDR	This component, which is normally off, required to be off for HSB, is affected by the inability to assure that 2CA PU0003 can be tripped from the Control Room via 2SA-48ABC and 2SA-49AB. Valves 2SA-48ABC and 2SA-49AB may receive a blackout signal or an SSPS signal, which can fail the valves open (de-energize valve solenoids) and start the TDCA Pump. The loss of Train A power affects 2CA VA0052AB, 2CA VA0054AC, 2CA VA0064AB, and 2CA VA0066AC. Also the failure of cables affect 2CA VA0052AB and 2CA VA0064AB such that they are unavailable to throttle flow. This is a potential overfill concern on unused Steam Generators 1A and 1B. This failure condition may 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.
Component(s)	2CA PU0003 - Unit 2 Turbine Driven Auxiliary Feedwater Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-24 (OP-18A-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0026AB - 2D S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-25 (OP-18A-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0028AB - 2C S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-26 (OP-18A-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCB1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0030AB - 2B S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-27 (OP-18A-030)
VFDR	This component, which is normally open, required closed for HSB, is affected by an assumed loss of offsite power. The concern is to prevent a S/G overfill condition. Power supply 0EPKDCDCA1 is not diesel backed. This failure condition may 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.
Component(s)	2CF VA0035AB - 2A S/G Feedwater Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-28 (OP-18A-032)
VFDR	This component, which is normally on, required off for HSB, is affected by the inability to ensure closure of the NC Spray valves. 2NC PU0001 and 2NC PU0002 are required to be tripped OR spray valves 2NC VA0027C and 2NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures in the solenoid (2 NC 1070) and E/P (2 EIA 573 and 2 EIA 574) circuits. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0001 - 2A Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-29 (OP-18A-032)
VFDR	This component, which is normally on, required off for HSB, is affected by the inability to ensure closure of the NC Spray valves. 2NC PU0001 and 2NC PU0002 are required to be tripped OR spray valves 2NC VA0027C and 2NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures in the solenoid (2 NC 1070) and E/P (2 EIA 573 and 2 EIA 574) circuits. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC PU0002 - 2B Reactor Coolant Pump
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-30 (OP-18A-032)
VFDR	This component, which is normally open, required closed for HSB, is affected by the inability to ensure closure of the NC Spray valves. 2NC PU0001 and 2NC PU0002 are required to be tripped OR spray valves 2NC VA0027C and 2NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures in the solenoid (2 NC 1070) and E/P (2 EIA 573 and 2 EIA 574) circuits. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0027C - A Loop Pressurizer Spray Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-31 (OP-18A-032)
VFDR	This component, which is normally open, required closed for HSB, is affected by the inability to ensure closure of the NC Spray valves. 2NC PU0001 and 2NC PU0002 are required to be tripped OR spray valves 2NC VA0027C and 2NC VA0029C are required closed in order to secure pressurizer spray. The NC Spray valves may remain open due to cable failures in the solenoid (2 NC 1070) and E/P (2 EIA 573 and 2 EIA 574) circuits. DC control power may not be available for Reactor Coolant Pump trip from the Control Room. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0029C - B Loop Pressurizer Spray Control Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-32 (OP-18A-033)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation. A cable located in the fire area (2*NC 819) can cause a spurious opening of the PORV (2NC VA0034A). Failure of cable 2*NC 775 can also spuriously open the Block Valve (2NC VA0033A) (MSO #18). In addition, cable 2*NC 775 may cause a IN 92-18 concern on Block Valve 2NC VA0033A. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0033A - Pressurizer PORV Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-33 (OP-18A-033)
VFDR	This component, which is normally closed, required closed for HSB, is affected by spurious operation. A cable located in the fire area (2*NC 819) can cause a spurious opening of the PORV (2NC VA0034A). Failure of cable 2*NC 775 can also spuriously open the Block Valve (2NC VA0033A) (MSO #18). In addition, cable 2*NC 775 may cause a IN 92-18 concern on Block Valve 2NC VA0033A. This failure condition may challenge the Pressure Control Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a separation issue. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC VA0034A - Pressurizer PORV
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-34 (OP-18A-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to cable failure. The letdown isolation and the letdown orifice valves (2NV-1A, 2NV-2A, 2NV-35A, 2NV-457A, 2NV-458A, and 2NV-459) have cable failures that may prevent the valves from closing, therefore letdown isolation cannot be accomplished. The cable failure for 2NV-1A (2*BB 505) and the cable failures for 2NV-2A (2*BB 505 and 2*ATC 201) may cause a loss of power or control. 2NV-1A and 2NV-2A are provided with an interlock that prevents the opening of these valves unless 2NV-457A, 2NV-458A, and 2NV-35A are closed. Another interlock prevents these valves from closing while 2NV-457A, 2NV-458A, and 2NV-35A are open. Cable failures for valve 2NV-35A (2*NV 756) may cause spurious operation of the valve and the failure of cable 2*BB 505 may cause a loss of power to 2NV-35A, 2NV-457A, and 2NV-458A as well. The spurious opening of 2NV-35A may maintain 2NVSV0010 and 2NVSV0020 energized and prevent 2NV-1A and 2NV-2A from closing. 2NV VA0007B functions correctly for this fire area (MSO #6 and #7). This failure condition may challenge the 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.
Component(s)	2NV VA0001A - Reactor Coolant Letdown to Regenerative Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-35 (OP-18A-034)
VFDR	This component, which is normally open, required closed for HSB, is affected by spurious operation due to cable failure. The letdown isolation and the letdown orifice valves (2NV-1A, 2NV-2A, 2NV-35A, 2NV-457A, 2NV-458A, and 2NV-459) have cable failures that may prevent the valves from closing, therefore letdown isolation cannot be accomplished. The cable failure for 2NV-1A (2*BB 505) and the cable failures for 2NV-2A (2*BB 505 and 2*ATC 201) may cause a loss of power or control. 2NV-1A and 2NV-2A are provided with an interlock that prevents the opening of these valves unless 2NV-457A, 2NV-458A, and 2NV-35A are closed. Another interlock prevents these valves from closing while 2NV-457A, 2NV-458A, and 2NV-35A are open. Cable failures for valve 2NV-35A (2*NV 756) may cause spurious operation of the valve and the failure of cable 2*BB 505 may cause a loss of power to 2NV-35A, 2NV-457A, and 2NV-458A as well. The spurious opening of 2NV-35A may maintain 2NVSV0010 and 2NVSV0020 energized and prevent 2NV-1A and 2NV-2A from closing. 2NV VA0007B functions correctly for this fire area (MSO #6 and #7). This failure condition may challenge the 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.
Component(s)	2NV VA0002A - Reactor Coolant Letdown to Regenerative Heat Exchanger Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

VFDR ID	VFDR-18A-36 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5490 - SG # A Narrow Range Level CH. # 4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-37 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5510 - SG # A Narrow Range Level CH. # 2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-38 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5520 - SG # B Narrow Range Level CH. # 4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-39 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5530 - SG # B Narrow Range Level CH. # 3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-40 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5540 - SG # B Narrow Range Level CH. # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-41 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5550 - SG # C Narrow Range Level CH. # 4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-42 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5560 - SG # C Narrow Range Level CH. # 3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-43 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5570 - SG # C Narrow Range Level CH. # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-44 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5580 - SG # D Narrow Range Level CH. # 4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-45 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5590 - SG # D Narrow Range Level CH. # 3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	VFDRs
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-46 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5600 - SG # D Narrow Range Level CH. # 2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-47 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 6000 - SG # A Narrow Range Level CH. # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-48 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 6010 - SG # B Narrow Range Level CH. # 2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-49 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 6020 - SG # C Narrow Range Level CH. # 2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-50 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 6030 - SG # D Narrow Range Level CH. # 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-51 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC P 5150 - Pressurizer Pressure CH. #2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-52 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC P 5151 - Pressurizer Level CH. #2
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-53 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC P 5160 - Pressurizer Level CH. #1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-54 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC P 5161 - Pressurizer Pressure CH. #1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-55 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC P 5162 - Pressurizer Level Channel 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-56 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC P 5163 - Pressurizer Pressure Channel 1
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-57 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC P 5170 - Pressurizer Pressure CH. #3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-58 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC P 5171 - Pressurizer Pressure CH. #4
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-59 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2NC P 5172 - Pressurizer Level CH.#3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

VFDR ID	VFDR-18A-60 (OP-18A-037)
VFDR	This component, which is normally closed, required to be cycled for HSB, is affected by spurious operation due to failure of cable 2*ATC 2202. The spurious opening of valves NI-9A or NI-10B along with the normal charging flowpath being open could starve seal injection flow. 2NV PU0015 gets a spurious start due to failure of cable 2*ILE 664 and cannot be tripped from the control room. An assumed SSPS A(B) Safety Injection Signal may also open NI-9A(NI-10B). However, this same signal would close NV-244A (NV-245B) isolating the normal charging path. See MSO Scenario 2 in calculation MCC-1435.00-00-0023. This failure condition may challenge the 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.
Component(s)	2NI VA0009A - Unit 2 Charging Pumps to Reactor Coolant Cold Legs Containment Outside Isolation Valve
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action

Attachment C

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

Fire Area ID:	18A - Unit 2 Train A Switchgear HVAC Room	**VFDRs**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

VFDR ID	VFDR-18A-61 (PH-18A-003)
VFDR	This component, which is normally available, required available for HSB, is affected by numerous cable failures that affect all credited channels of control room indication of this parameter. One channel of indication is required. Cable routing for all four channels is located at ceiling level in the fire area. This failure condition may challenge the Process Monitoring Nuclear Safety Performance Criteria. This condition represents a variance from the deterministic requirements of Section 4.2.3 of NFPA 805. This is a pre-existing operator manual action. Evaluate for compliance using the performance-based approach of NFPA 805, Section 4.2.4.
Component(s)	2CF P 5500 - SG # A Narrow Range Level CH. # 3
Disposition	Satisfies Risk, DID, and Safety Margin Criteria Without Further Action (VFDR not modeled in Fire PRA)

Attachment C

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

Fire Area ID:	19 - Unit 1 Cable Room	**Fire Area Definition**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Room ID	Description
801	Cable Room (Unit 1)

Attachment C

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

Fire Area ID:	19 - Unit 1 Cable Room	**Performance Goals**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Performance Goal	Method of Accomplishment	Comments
0. Plant Shutdown Location	Shutdown to HSB from the Standby Shutdown Facility (SSF).	
1. Reactivity Control Function	Manual trip from the MCR. Reactivity control by injecting borated water via the seal injection flow path using the spent fuel pool with the Standby Makeup Pump from the SSF.	
2. Inventory Control Function	Inventory control is provided by isolation of the reactor coolant system and makeup via the seal injection path from the spent fuel pool using the SMP with control from the SSF. Letdown as necessary using the reactor head vents.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
3. Pressure Control Function	Pressure control is provided by isolating the reactor coolant system and makeup with spent fuel pool water and the SMP. One sub-bank of "D" pressurizer heaters to maintain steam bubble in pressurizer. Pressurizer code safeties remain available.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
4. Decay Heat Removal Function	Decay heat removal from the SSF using natural circulation and main steam safeties. S/G feed by turbine driven auxiliary feedwater pump using CAST or condenser circ water to S/G A, B and C. Main Feedwater is isolated.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
5. Process Monitoring Function	Process monitoring available in the SSF.	Variance from the deterministic requirements of NFPA 805 exist for this performance goal; Fire Risk Evaluation required.
6. Vital Auxiliaries	Essential electrical power, auxiliaries and HVAC is available from or in the SSF.	

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. Flooding of the suppression areas and discharge of suppression water to adjacent compartments is controlled and will not jeopardize achievement of safe and stable conditions either.

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

Fire Area ID:	19 - Unit 1 Cable Room	**Previously Approved Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Licensing Action 04. Cable Room Barrier Three Hour Deviation

Licensing Basis

The NRC requested in a letter to Duke dated 6/14/1978, a fire test be performed on the barrier separating FAs 19 and 20 (Unit 1 and 2 Cable Rooms) to substantiate the barrier meets the 3-hour fire resistance requirement for a fire area wall. Duke submitted to the NRC the results of the fire test in a response letter dated 1/9/1979. The results of the test demonstrated the barrier fire rating was less than three hours but in excess of two hours. Duke installed a modification to the wall assembly to provide the wall assembly with sufficient integrity to act as a three hour barrier. This modification was based on a recommendation by the Staff's fire protection consultant, who witnessed the testing, and has been discussed with the Staff.

The NRC accepted the two hour fire rated wall assembly in a 1/8/1981 NRR Memo to Duke. The acceptance was based on the following:

- The barrier exceeding a two hour fire resistance per the test results.
- The existing fuel load in Cable Rooms.
- Location of the safety related equipment.
- Fire detection in areas.
- Fire suppression capability in areas.

SER, Supplement 5, April 1981, found the wall to be an acceptable barrier given the criteria above and the installation of a fire proofed angle iron at the ceiling of the wall separating Unit 1 and Unit 2 cable rooms. The angle iron has been installed.

Licensing Action 05. Cable Spreading Rooms Fog-Type Sprinkler System Deviation

Licensing Basis

In a letter dated 10-19-1979, the NRC identified multiple NFPA-13 and -15 deviations in the manually actuated "fog-type" sprinkler system installed in each cable spreading room.

The system design was approved in the Safety Evaluation Report Supplement dated 4-1-1981.

In the 9-15-1986 letter, the NRC stated these deviations to be discrepancies that were not pertinent since the plant can achieve and maintain hot standby conditions independently of these areas.

Licensing Action 08. Duct Shaft Wall 3-hour Fire Rating Deviation

Licensing Basis

In a letter dated 09-30-1980, the NRC identified the walls enclosing the duct shafts next to the cable spreading rooms are not of three hour fire rated construction and it is probable that this deficiency exist in other areas of the plant.

Duke responded 10-24-1980 stating the duct shaft walls of concern were not provided with gypsum inside the duct shaft. Duke believes this configuration is functionally equivalent since the duct shaft walls need only prevent fire from entering the duct shaft from one fire area and exiting the duct shaft into another fire area. For a fire to follow this path would require burning through six layers of a gypsum as was tested.

The NRC found Duke's response acceptable in a memo dated 01-08-1981. The letter stated, "We reviewed this existing situation and determined that no fire rating is required inside of the duct shaft. Therefore, we find the applicant's design approach of providing fire resistance on only the exterior side of the shaft wall to be acceptable."

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

Fire Area ID:	19 - Unit 1 Cable Room	**Engineering Evaluations**
Compliance Basis:	NFPA 805, Section 4.2.4.2 Performance Based	

Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 04 Fire Protection Evaluation For Floor Blockouts With Free Area In Excess of 9 ft. sq. And Structural Framing Spans Exceeding 42 in. Without Cross Member Framing
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the adequacy of the floor blockouts regarding the framing support provided for the Silicone Foam free areas (largest rectangular area of Silicone Foam without penetrating items) exceeding 9 ft. sq. The penetrations are 750-26.0-1, 750-131.0-1, 767-2.0-1, and 767-156.0-2. These penetrations do not conform to typical details E-2 and/or F-5 of DPC 1435.00-00-0006. Each of the penetrations is located in a NRC committed 3-hour fire barrier. The calculation determined the penetrations identified are considered adequate for the area fire hazards, considering: • Area fire detection for FAs 13, 15, 16, 19, 20, 22, and 23 • Partial area automatic fire suppression for FA 13 • Fire Brigade response for FAs 13, 15, 16, 19, 20, 22, and 23 • Partial manual suppression (i.e. hose stations, extinguishers) for FAs 13, 15, 16, 19, 20, 22, and 23 • Manually actuated fog/mist sprinkler system for FAs 19 and 20 • Limited combustibles for FAs 13, 15, 16, 19, 20, 22, and 23. The ability to achieve and maintain safe shutdown is not compromised by the penetration seal and support framing provided for the penetrations of concern.

Engineering Evaluation ID	MCC-1435.03-00-0012, Att. 11 Fire Protection Evaluation For Floor Blockouts With Fiberboard Damming That Is Not Mechanically Secured
Revision	
Inactive	No
Functionally Equivalent	No
Adequate for the Hazard	Yes
Summary	This calculation evaluates the fire protection adequacy of the floor blockouts identified below regarding their ceramic fiberboard damming configuration: 750-10.0-2 767-11.0-1, -2, -3, -4 767-118.0-1, -2, -3, -4 767-119.0-1, -2, -3, -4 767-12.0-2 767-120.0-1, -2, -3, -4, -5 767-37.0-1, -2, -3, -4, -5 767-38.0-1, -2, -3, -4 767-39.0-1, -2, -3, -4 767-62.0-1, -3, -4 767-65.0-10, -14 767.66.0-1, -2, -3, -4 767-67.0-1, -2, -3, -4, -5