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ESBWR Design Control Document Tier 2 Chapter 9 *Auxiliary Systems* Appendix 9A

Contents

9A. Fire Hazards Analysis	
9A.1 Introduction	9A.1-1
9A.2 Analysis Criteria	
9A.2.1 Codes and Standards	
9A.2.2 Fire Area Separation and Fire Equipment Drawings	
9A.2.3 Terminology	9A.2-1
9A.2.4 Acceptance Criteria	9A.2-3
9A.2.5 Systems Required to Achieve Safe Shutdown in the Event of Fire	
9A.2.6 Redundant Nonsafety Systems and Equipment	
9A.3 Analysis Approach	9A.3-1
9A.3.1 Review Data	9A.3-1
9A.3.2 Steam Tunnel Barrier Exception	
9A.3.3 Exceptions to Separation Criteria	
9A.3.4 Exceptions to Penetration Requirements	
9A.3.5 Wall Deviations	9A.3-3
9A.3.6 Door Deviations	
9A.3.7 Basemats	
9A.3.8 Smoke Removal	
9A.4 Fire Hazard and Safe Shutdown Analysis Summary	9A.4-1
9A.4.1 Reactor Building	9A.4-1
9A.4.2 Fuel Building	9A.4-3
9A.4.3 Control Building	9A.4-4
9A.4.4 Turbine Building	
9A.4.5 Radwaste Building	9A.4-7
9A.4.6 Electrical Building	
9A.4.7 Yard	9A.4-9
9A.4.8 Service Building	9 A .4-11
9A.4.9 Service Water/Water Treatment Building	9A.4-12
9A.5 Fire Protection Analyses by Room or Fire Zone	9A.5-1
9A.5.1 Reactor Building	9A.5-1
9A.5.2 Fuel Building	9A.5-1
9A.5.3 Control Building	9A.5-2
9A.5.4 Turbine Building	9A.5-2
9A.5.5 Radwaste Building	
9A.5.6 Electrical Building	
9A.5.7 Yard	
9A.5.8 Service Building	

9A.5.9 Service Water/Water Treatment Building	9A.5-2
9A.6 Special Cases	9A.6-1
9A.6.1 Piping Penetrations, Reactor Building	9A.6-1
9A.6.2 Fire Door Deviations	9A.6-1
9A.6.3 Pipe Break Analyses	9A.6-1
9A.6.4 Fire Separation for Divisional Electrical Systems	9A.6-1
9A.6.5 Comparison to BTP SBLP 9.5-1 and Regulatory Guide 1.189	9A.6-8
9A.6.6 Comparison to International Building Code	
9A.7 COL Information	9A.7-17

List of Tables

- Table 9A.2-1 Fire Protection Codes and Standards
- Table 9A.2-2 Systems Required to Achieve Safe Shutdown in the Event of Fire
- Table 9A.5-1, Reactor Building
- Table 9A.5-2, Fuel Building
- Table 9A.5-3, Control Building
- Table 9A.5-4, Turbine Building
- Table 9A.5-5, Radwaste Building
- Table 9A.5-6, Electrical Building
- Table 9A.5-7, Yard

List of Illustrations

Figure 9A.2-1. Nuclear Island Fire Protection Zones ESBWR DCD EL -11500 Figure 9A.2-2. Nuclear Island Fire Protection Zones ESBWR DCD EL -6400 Figure 9A.2-3. Nuclear Island Fire Protection Zones ESBWR DCD EL -1000 Figure 9A.2-4. Nuclear Island Fire Protection Zones ESBWR DCD EL 4650 Figure 9A.2-5. Nuclear Island Fire Protection Zones ESBWR DCD EL 9060 Figure 9A.2-6. Nuclear Island Fire Protection Zones ESBWR DCD EL 13570 Figure 9A.2-7. Nuclear Island Fire Protection Zones ESBWR DCD EL 17500 Figure 9A.2-8. Nuclear Island Fire Protection Zones ESBWR DCD EL 27000 Figure 9A.2-9. Nuclear Island Fire Protection Zones ESBWR DCD EL 34000 Figure 9A.2-10. Nuclear Island Fire Protection Zones ESBWR DCD Section "A-A" Figure 9A.2-11. Nuclear Island Fire Protection Zones ESBWR DCD Section "B-B" Figure 9A.2-12. Turbine Building Fire Protection Zones ESBWR DCD EL -1400 Figure 9A.2-13. Turbine Building Fire Protection Zones ESBWR DCD EL 4650 Figure 9A.2-14. Turbine Building Fire Protection Zones ESBWR DCD EL 12000 Figure 9A.2-15. Turbine Building Fire Protection Zones ESBWR DCD EL 20000 Figure 9A.2-16. Turbine Building Fire Protection Zones ESBWR DCD EL 28000 Figure 9A.2-17. Turbine Building Fire Protection Zones ESBWR DCD EL (Various) Figure 9A.2-18. Turbine Building Fire Protection Zones ESBWR DCD Section A-A Figure 9A.2-19. Turbine Building Fire Protection Zones ESBWR DCD Section B-B Figure 9A.2-20. Radwaste Building Fire Protection Zones ESBWR DCD EL -9350 Figure 9A.2-21. Radwaste Building Fire Protection Zones ESBWR DCD EL -2350 Figure 9A.2-22. Radwaste Building Fire Protection Zones ESBWR DCD EL 4650 Figure 9A.2-23. Radwaste Building Fire Protection Zones ESBWR DCD EL 10650 Figure 9A.2-24. Radwaste Building Fire Protection Zones ESBWR DCD Section A-A Figure 9A.2-25. Electrical Building Fire Protection Zone ESBWR DCD EL 4650 Figure 9A.2-26. Electrical Building Fire Protection Zone ESBWR DCD EL 9800 Figure 9A.2-27. Electrical Building Fire Protection Zone ESBWR DCD EL 13000 Figure 9A.2-28. Electrical Building Fire Protection Zone ESBWR DCD EL 18000 Figure 9A.2-29. Electrical Building Fire Protection Zone ESBWR DCD EL 22000 Figure 9A.2-30. Electrical Building Fire Protection Zone ESBWR DCD EL 27000 Figure 9A.2-31. Electrical Building Fire Protection Zone ESBWR DCD EL (Various) Figure 9A.2-32. Electrical Building Fire Protection Zone ESBWR DCD Section A-A Figure 9A.2-33. Site Fire Protection Zone ESBWR DCD Plot Plan

26A6642BB Rev. 01

<u>Term</u>	Definition
10 CFR	Title 10, Code of Federal Regulations
A/D	Analog-to-Digital
AASHTO	American Association of Highway and Transportation Officials
AB	Auxiliary Boiler
ABS	Auxiliary Boiler System
ABWR	Advanced Boiling Water Reactor
ac / AC	Alternating Current
AC	Air Conditioning
ACF	Automatic Control Function
ACI	American Concrete Institute
ACS	Atmospheric Control System
AD	Administration Building
ADS	Automatic Depressurization System
AEC	Atomic Energy Commission
AFIP	Automated Fixed In-Core Probe
AGMA	American Gear Manufacturer's Association
AHS	Auxiliary Heat Sink
AHU	Air handling unit
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AL	Analytical Limit
ALARA	As Low As Reasonably Achievable
ALWR	Advanced Light Water Reactor
ANS	American Nuclear Society
ANSI	American National Standards Institute
AOO	Anticipated Operational Occurrence
AOV	Air Operated Valve
API	American Petroleum Institute
APRM	Average Power Range Monitor
APR	Automatic Power Regulator
APRS	Automatic Power Regulator System
ARI	Alternate Rod Insertion
ARMS	Area Radiation Monitoring System
ASA	American Standards Association
ASD	Adjustable Speed Drive
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers

Term	Definition
AST	Alternate Source Term
ASTM	American Society of Testing Methods
AT	Unit Auxiliary Transformer
ATLM	Automated Thermal Limit Monitor
ATWS	Anticipated Transients Without Scram
AV	Allowable Value
AWS	American Welding Society
AWWA	American Water Works Association
B&PV	Boiler and Pressure Vessel
BAF	Bottom of Active Fuel
BHP	Brake Horse Power
BOP	Balance of Plant
BPU	Bypass Unit
BPWS	Banked Position Withdrawal Sequence
BRE	Battery Room Exhaust
BRL	Background Radiation Level
BTP	NRC Branch Technical Position
BTU	British Thermal Unit
BWR	Boiling Water Reactor
BWROG	Boiling Water Reactor Owners Group
CAV	Cumulative absolute velocity
C&FS	Condensate and Feedwater System
C&I	Control and Instrumentation
C/C	Cooling and Cleanup
СВ	Control Building
CBGAHVS	Control Building General Area
CBHVAC	Control Building HVAC
CBHVS	Control Building Heating, Ventilation and Air Conditioning System
CCI	Core-Concrete Interaction
CDF	Core Damage Frequency
CFR	Code of Federal Regulations
CIRC	Circulating Water System
CIS	Containment Inerting System
CIV	Combined Intermediate Valve
CLAVS	Clean Area Ventilation Subsystem of Reactor Building HVAC
СМ	Cold Machine Shop
CMS	Containment Monitoring System
CMU	Control Room Multiplexing Unit

<u>Term</u>	Definition
COL	Combined Operating License
COLR	Core Operating Limits Report
CONAVS	Controlled Area Ventilation Subsystem of Reactor Building HVAC
CPR	Critical Power Ratio
CPS	Condensate Purification System
CPU	Central Processing Unit
CR	Control Rod
CRD	Control Rod Drive
CRDA	Control Rod Drop Accident
CRDH	Control Rod Drive Housing
CRDHS	Control Rod Drive Hydraulic System
CRGT	Control Rod Guide Tube
CRHA	Control Room Habitability Area
CRHAHVS	Control Room Habitability Area HVAC Sub-system
CRT	Cathode Ray Tube
CS&TS	Condensate Storage and Transfer System
CSDM	Cold Shutdown Margin
CS / CST	Condensate Storage Tank
СТ	Main Cooling Tower
CTVCF	Constant Voltage Constant Frequency
CUF	Cumulative usage factor
CWS	Chilled Water System
D-RAP	Design Reliability Assurance Program
DAC	Design Acceptance Criteria
DAW	Dry Active Waste
DBA	Design Basis Accident
dc / DC	Direct Current
DCS	Drywell Cooling System
DCIS	Distributed Control and Information System
DEPSS	Drywell Equipment and Pipe Support Structure
DF	Decontamination Factor
D/F	Diaphragm Floor
DG	Diesel-Generator
DHR	Decay Heat Removal
DM&C	Digital Measurement and Control
DOF	Degree of freedom
DOI	Dedicated Operators Interface
DOT	Department of Transportation

Term	Definition
dPT	Differential Pressure Transmitter
DPS	Diverse Protection System
DPV	Depressurization Valve
DR&T	Design Review and Testing
DS	Independent Spent Fuel Storage Installation
DTM	Digital Trip Module
DW	Drywell
EB	Electrical Building
EBAS	Emergency Breathing Air System
EBHV	Electrical Building HVAC
ECCS	Emergency Core Cooling System
E-DCIS	Essential DCIS (Distributed Control and Information System)
EDO	Environmental Qualification Document
EFDS	Equipment and Floor Drainage System
EFPY	Effective full power years
EFU	Emergency Filter Unit
EHC	Electrohydraulic Control (Pressure Regulator)
ENS	Emergency Notification System
EOC	Emergency Operations Center
EOC	End of Cycle
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedures
EPDS	Electric Power Distribution System
EPG	Emergency Procedure Guidelines
EPRI	Electric Power Research Institute
EQ	Environmental Qualification
ERICP	Emergency Rod Insertion Control Panel
ERIP	Emergency Rod Insertion Panel
ESF	Engineered Safety Feature
ETS	Emergency Trip System
FAC	Flow-Accelerated Corrosion
FAPCS	Fuel and Auxiliary Pools Cooling System
FATT	Fracture Appearance Transition Temperature
FB	Fuel Building
FBFPHV	Fuel Building Fuel Pool HVAC
FBGAHV	Fuel Building General Area HVAC
FBHV	Fuel Building HVAC
FCI	Fuel-Coolant Interaction

<u>Term</u>	Definition
FCM	File Control Module
FCS	Flammability Control System
FCU	Fan Cooling Unit
FDDI	Fiber Distributed Data Interface
FFT	Fast Fourier Transform
FFWTR	Final Feedwater Temperature Reduction
FHA	Fire Hazards Analysis
FIV	Flow-Induced Vibration
FMCRD	Fine Motion Control Rod Drive
FMEA	Failure Modes and Effects Analysis
FPS	Fire Protection System
FO	Diesel Fuel Oil Storage Tank
FOAKE	First-of-a-Kind Engineering
FPE	Fire Pump Enclosure
FTDC	Fault-Tolerant Digital Controller
FTS	Fuel Transfer System
FW	Feedwater
FWCS	Feedwater Control System
FWS	Fire Water Storage Tank
GCS	Generator Cooling System
GDC	General Design Criteria
GDCS	Gravity-Driven Cooling System
GE	General Electric Company
GE-NE	GE Nuclear Energy
GEN	Main Generator System
GETAB	General Electric Thermal Analysis Basis
GL	Generic Letter
GM	Geiger-Mueller Counter
GM-B	Beta-Sensitive GM Detector
GSIC	Gamma-Sensitive Ion Chamber
GSOS	Generator Sealing Oil System
GWSR	Ganged Withdrawal Sequence Restriction
HAZ	Heat-Affected Zone
HCU	Hydraulic Control Unit
HCW	High Conductivity Waste
HDVS	Heater Drain and Vent System
HEI	Heat Exchange Institute
HELB	High Energy Line Break

Term	<u>Definition</u>
HEP	Human error probability
HEPA	High Efficiency Particulate Air/Absolute
HFE	Human Factors Engineering
HFF	Hollow Fiber Filter
HGCS	Hydrogen Gas Cooling System
HIC	High Integrity Container
HID	High Intensity Discharge
HIS	Hydraulic Institute Standards
HM	Hot Machine Shop & Storage
HP	High Pressure
HPNSS	High Pressure Nitrogen Supply System
HPT	High-pressure turbine
HRA	Human Reliability Assessment
HSI	Human-System Interface
HSSS	Hardware/Software System Specification
HVAC	Heating, Ventilation and Air Conditioning
HVS	High Velocity Separator
HWC	Hydrogen Water Chemistry
HWCS	Hydrogen Water Chemistry System
HWS	Hot Water System
HX	Heat Exchanger
I&C	Instrumentation and Control
I/O	Input/Output
IAS	Instrument Air System
IASCC	Irradiation Assisted Stress Corrosion Cracking
IBC	International Building Code
IC	Ion Chamber
IC	Isolation Condenser
ICD	Interface Control Diagram
ICS	Isolation Condenser System
IE	Inspection and Enforcement
IEB	Inspection and Enforcement Bulletin
IED	Instrument and Electrical Diagram
IEEE	Institute of Electrical and Electronic Engineers
IFTS	Inclined Fuel Transfer System
IGSCC	Intergranular Stress Corrosion Cracking
IIS	Iron Injection System
ILRT	Integrated Leak Rate Test

<u>Term</u>	Definition
IOP	Integrated Operating Procedure
IMC	Induction Motor Controller
IMCC	Induction Motor Controller Cabinet
IRM	Intermediate Range Monitor
ISA	Instrument Society of America
ISI	In-Service Inspection
ISLT	In-Service Leak Test
ISM	Independent Support Motion
ISMA	Independent Support Motion Response Spectrum Analysis
ISO	International Standards Organization
ITA	Inspections, Tests or Analyses
ITAAC	Inspections, Tests, Analyses and Acceptance Criteria
ITA	Initial Test Program
LAPP	Loss of Alternate Preferred Power
LCO	Limiting Conditions for Operation
LCW	Low Conductivity Waste
LD	Logic Diagram
LDA	Lay down Area
LD&IS	Leak Detection and Isolation System
LERF	Large early release frequency
LFCV	Low Flow Control Valve
LHGR	Linear Heat Generation Rate
LLRT	Local Leak Rate Test
LMU	Local Multiplexer Unit
LO	Dirty/Clean Lube Oil Storage Tank
LOCA	Loss-of-Coolant-Accident
LOFW	Loss-of-feedwater
LOOP	Loss of Offsite Power
LOPP	Loss of Preferred Power
LP	Low Pressure
LPCI	Low Pressure Coolant Injection
LPCRD	Locking Piston Control Rod Drive
LPMS	Loose Parts Monitoring System
LPRM	Local Power Range Monitor
LPSP	Low Power Setpoint
LWMS	Liquid Waste Management System
MAAP	Modular Accident Analysis Program
MAPLHGR	Maximum Average Planar Linear Head Generation Rate

<u>Term</u>	Definition
MAPRAT	Maximum Average Planar Ratio
MBB	Motor Built-In Brake
MCC	Motor Control Center
MCES	Main Condenser Evacuation System
MCPR	Minimum Critical Power Ratio
MCR	Main Control Room
MCRP	Main Control Room Panel
MELB	Moderate Energy Line Break
MLHGR	Maximum Linear Heat Generation Rate
MMI	Man-Machine Interface
MMIS	Man-Machine Interface Systems
MOV	Motor-Operated Valve
MPC	Maximum Permissible Concentration
MPL	Master Parts List
MS	Main Steam
MSIV	Main Steam Isolation Valve
MSL	Main Steamline
MSLB	Main Steamline Break
MSLBA	Main Steamline Break Accident
MSR	Moisture Separator Reheater
MSV	Mean Square Voltage
MT	Main Transformer
MTTR	Mean Time To Repair
MWS	Makeup Water System
NBR	Nuclear Boiler Rated
NBS	Nuclear Boiler System
NCIG	Nuclear Construction Issues Group
NDE	Nondestructive Examination
NE-DCIS	Non-Essential Distributed Control and Information System
NDRC	National Defense Research Committee
NDT	Nil Ductility Temperature
NFPA	National Fire Protection Association
NIST	National Institute of Standard Technology
NICWS	Nuclear Island Chilled Water Subsystem
NMS	Neutron Monitoring System
NOV	Nitrogen Operated Valve
NPHS	Normal Power Heat Sink
NPSH	Net Positive Suction Head

<u>Term</u>	Definition
NRC	Nuclear Regulatory Commission
NRHX	Non-Regenerative Heat Exchanger
NS	Non-seismic
NSSS	Nuclear Steam Supply System
NT	Nitrogen Storage Tank
NTSP	Nominal Trip Setpoint
O&M	Operation and Maintenance
O-RAP	Operational Reliability Assurance Program
OBCV	Overboard Control Valve
OBE	Operating Basis Earthquake
OGS	Offgas System
OHLHS	Overhead Heavy Load Handling System
OIS	Oxygen Injection System
OLMCPR	Operating Limit Minimum Critical Power Ratio
OLU	Output Logic Unit
OOS	Out-of-service
ORNL	Oak Ridge National Laboratory
OSC	Operational Support Center
OSHA	Occupational Safety and Health Administration
OSI	Open Systems Interconnect
P&ID	Piping and Instrumentation Diagram
PA/PL	Page/Party-Line
PABX	Private Automatic Branch (Telephone) Exchange
PAM	Post Accident Monitoring
PAR	Passive Autocatalytic Recombiner
PAS	Plant Automation System
PASS	Post Accident Sampling Subsystem of Containment Monitoring System
PCC	Passive Containment Cooling
PCCS	Passive Containment Cooling System
РСТ	Peak cladding temperature
PCV	Primary Containment Vessel
PFD	Process Flow Diagram
PGA	Peak Ground Acceleration
PGCS	Power Generation and Control Subsystem of Plant Automation System
РН	Pump House
PL	Parking Lot
PM	Preventive Maintenance
PMCS	Performance Monitoring and Control Subsystem of NE-DCIS

<u>Term</u>	Definition
PMF	Probable Maximum Flood
PMP	Probable Maximum Precipitation
PQCL	Product Quality Check List
PRA	Probabilistic Risk Assessment
PRMS	Process Radiation Monitoring System
PRNM	Power Range Neutron Monitoring
PS	Plant Stack
PSD	Power Spectra Density
PSS	Process Sampling System
PSWS	Plant Service Water System
РТ	Pressure Transmitter
PWR	Pressurized Water Reactor
QA	Quality Assurance
RACS	Rod Action Control Subsystem
RAM	Reliability, Availability and Maintainability
RAPI	Rod Action and Position Information
RAT	Reserve Auxiliary Transformer
RB	Reactor Building
RBC	Rod Brake Controller
RBCC	Rod Brake Controller Cabinet
RBCWS	Reactor Building Chilled Water Subsystem
RBHV	Reactor Building HVAC
RBS	Rod Block Setpoint
RBV	Reactor Building Vibration
RC&IS	Rod Control and Information System
RCC	Remote Communication Cabinet
RCCV	Reinforced Concrete Containment Vessel
RCCWS	Reactor Component Cooling Water System
RCPB	Reactor Coolant Pressure Boundary
RCS	Reactor Coolant System
RDA	Rod Drop Accident
RDC	Resolver-to-Digital Converter
REPAVS	Refueling and Pool Area Ventilation Subsystem of Fuel Building HVAC
RFP	Reactor Feed Pump
RG	Regulatory Guide
RHR	Residual heat removal (function)
RHX	Regenerative Heat Exchanger
RMS	Root Mean Square

<u>Term</u>	Definition				
RMS	Radiation Monitoring Subsystem				
RMU	Remote Multiplexer Unit				
RO	Reverse Osmosis				
ROM	Read-only Memory				
RPS	Reactor Protection System				
RPV	Reactor Pressure Vessel				
RRPS	Reference Rod Pull Sequence				
RSM	Rod Server Module				
RSPC	Rod Server Processing Channel				
RSS	Remote Shutdown System				
RSSM	Reed Switch Sensor Module				
RSW	Reactor Shield Wall				
RTIF	Reactor Trip and Isolation Function(s)				
RT _{NDT}	Reference Temperature of Nil-Ductility Transition				
RTP	Reactor Thermal Power				
RW	Radwaste Building				
RWBCR	Radwaste Building Control Room				
RWBGA	Radwaste Building General Area				
RWBHVAC	Radwaste Building HVAC				
RWCU/SDC	Reactor Water Cleanup/Shutdown Cooling				
RWE	Rod Withdrawal Error				
RWM	Rod Worth Minimizer				
SA	Severe Accident				
SAR	Safety Analysis Report				
SB	Service Building				
S/C	Digital Gamma-Sensitive GM Detector				
SC	Suppression Chamber				
S/D	Scintillation Detector				
S/DRSRO	Single/Dual Rod Sequence Restriction Override				
S/N	Signal-to-Noise				
S/P	Suppression Pool				
SAS	Service Air System				
SB&PC	Steam Bypass and Pressure Control System				
SBO	Station Blackout				
SBWR	Simplified Boiling Water Reactor				
SCEW	System Component Evaluation Work				
SCRRI	Selected Control Rod Run-in				
SDC	Shutdown Cooling				

<u>Term</u>	Definition
SDM	Shutdown Margin
SDS	System Design Specification
SEOA	Sealed Emergency Operating Area
SER	Safety Evaluation Report
SF	Service Water Building
SFP	Spent fuel pool
SIL	Service Information Letter
SIT	Structural Integrity Test
SIU	Signal Interface Unit
SJAE	Steam Jet Air Ejector
SLC	Standby Liquid Control
SLCS	Standby Liquid Control System
SLMCPR	Safety Limit Minimum Critical Power Ratio
SMU	SSLC Multiplexing Unit
SOV	Solenoid Operated Valve
SP	Setpoint
SPC	Suppression Pool Cooling
SPDS	Safety Parameter Display System
SPTMS	Suppression Pool Temperature Monitoring Subsystem of Containment Monitoring System
SR	Surveillance Requirement
SRM	Source Range Monitor
SRNM	Startup Range Neutron Monitor
SRO	Senior Reactor Operator
SRP	Standard Review Plan
SRS	Software Requirements Specification
SRSRO	Single Rod Sequence Restriction Override
SRSS	Sum of the squares
SRV	Safety Relief Valve
SRVDL	Safety relief valve discharge line
SSAR	Standard Safety Analysis Report
SSC(s)	Structure, System and Component(s)
SSE	Safe Shutdown Earthquake
SSLC	Safety System Logic and Control
SSPC	Steel Structures Painting Council
ST	Spare Transformer
STP	Sewage Treatment Plant
STRAP	Scram Time Recording and Analysis Panel
STRP	Scram Time Recording Panel

<u>Term</u>	Definition
SV	Safety Valve
SWH	Static water head
SWMS	Solid Waste Management System
SY	Switch Yard
TAF	Top of Active Fuel
TASS	Turbine Auxiliary Steam System
ТВ	Turbine Building
TBCE	Turbine Building Compartment Exhaust
TEAS	Turbine Building Air Supply
TBE	Turbine Building Exhaust
TBLOE	Turbine Building Lube Oil Area Exhaust
TBS	Turbine Bypass System
TBHV	Turbine Building HVAC
TBV	Turbine Bypass Valve
TC	Training Center
TCCWS	Turbine Component Cooling Water System
TCS	Turbine Control System
TCV	Turbine Control Valve
TDH	Total Developed Head
TEMA	Tubular Exchanger Manufacturers' Association
TFSP	Turbine first stage pressure
TG	Turbine Generator
TGSS	Turbine Gland Seal System
THA	Time-history accelerograph
TLOS	Turbine Lubricating Oil System
TLU	Trip Logic Unit
TMI	Three Mile Island
TMSS	Turbine Main Steam System
TRM	Technical Requirements Manual
TS	Technical Specification(s)
TSC	Technical Support Center
TSI	Turbine Supervisory Instrument
TSV	Turbine Stop Valve
UBC	Uniform Building Code
UHS	Ultimate heat sink
UL	Underwriter's Laboratories Inc.
UPS	Uninterruptible Power Supply
USE	Upper Shelf Energy

<u>Term</u>	Definition
USM	Uniform Support Motion
USMA	Uniform support motion response spectrum analysis
USNRC	United States Nuclear Regulatory Commission
USS	United States Standard
UV	Ultraviolet
V&V	Verification and Validation
Vac / VAC	Volts Alternating Current
Vdc / VDC	Volts Direct Current
VDU	Video Display Unit
VW	Vent Wall
VWO	Valves Wide Open
WD	Wash Down Bays
WH	Warehouse
WS	Water Storage
WT	Water Treatment
WW	Wetwell
XMFR	Transformer
ZPA	Zero period acceleration

9A. FIRE HAZARDS ANALYSIS

9A.1 INTRODUCTION

This fire hazards analysis (FHA) establishes and evaluates distinct fire areas for the Reactor Building, Fuel Building, Control Building, Turbine Building, Radwaste Building, Electrical Building, Yard, Pump House, Guard House, Hot Machine Shop, Service Water/Water Treatment Building, Cold Machine Shop, Warehouse, Training Center, Service Building, Auxiliary Boiler Building, and Administration Building. Plan and elevation view drawings of the buildings as listed in Table 9A.2-3 are utilized to depict the resulting fire area boundaries, fire barriers, and fire suppression systems. Fire areas containing safe shutdown equipment are identified and evaluated to confirm that a sufficient number of safety-related safe shutdown systems remain available during and following a design basis fire to achieve hot shutdown and maintain safe shutdown.

All materials capable of supporting combustion in each of the designated fire areas are identified and quantified in Tables 9A.5-1 through 9A.5-7. In addition, the fire protection features available for each room or fire area are identified in Tables 9A.5-1 through 9A.5-7.

The primary requirement of a nuclear facility is to operate and shutdown without undue risk to the health and safety of the public. In the event of a design basis fire, this requirement means that the ESBWR plant shall be capable of safely shutting down and maintaining a safe shutdown condition, while not posing a hazard to the public or operating personnel, and that recovery from the fire shall be capable of being accomplished safely.

This FHA identifies and evaluates the hazard of fires relative to maintaining the safe shutdown capability of the plant. This FHA does not evaluate the overall fire protection program for an ESBWR, since many of an effective program's elements are administrative or procedural in nature, but rather assumes that an ESBWR Owner will have an effective fire protection program in place. As described in Regulatory Guide 1.189, the primary objectives of a fire protection program at a nuclear plant are to minimize both the probability of occurrence and the consequences of fire. To meet these objectives, the fire protection program shall be designed to provide reasonable assurance, through defense in depth, that a fire will not prevent the performance of necessary safe shutdown functions and that radioactive releases to the environment in the event of a fire will be minimized.

9A.2 ANALYSIS CRITERIA

9A.2.1 Codes and Standards

The Table 9A.2-1 applicable codes and standards are incorporated into the design of the ESBWR Standard Plant, including the fire detection and suppression systems designs, to the maximum extent practicable. These codes and standards may differ slightly from those listed in NRC Branch Technical Position SPLB 9.5-1 in order to reflect the applicable code titles specified in the 2004 National Fire Code by the NFPA. Tables 1.9-21, 1.9-22, and 1.9-23 identify the relevant edition for each applicable code and standard.

9A.2.2 Fire Area Separation and Fire Equipment Drawings

Drawings showing the fire area separation and fire protection for the Reactor Building, Fuel Building, Control Building, Turbine Building, Radwaste Building, Electrical Building, and Yard are identified in the List of Illustrations.

Drawings showing the fire area separation and fire protection within the Yard buildings (such as within the Pump House, Guard House, Hot Machine Shop, Service Water/Water Treatment Building, Cold Machine Shop, Warehouse, Training Center, Service Building, Auxiliary Boiler Building, and Administration Building) will be added later when detailed arrangements within those buildings are available.

The fire protection water supplies and mains are shown schematically in Figure 9.5-1.

9A.2.3 Terminology

Fire Area – that portion (aggregate floor area) of a building or plant enclosed and bounded by fire walls, fire barriers, exterior walls, fire-resistance rated horizontal assemblies of a building, or other means in order to contain fire within that area.

Fire Barrier – a continuous vertical or horizontal fire-resistance rated construction assembly designed and constructed to limit the spread of heat and fire and to restrict the movement of smoke. Rated fire barriers are those fire barriers (e.g., walls, floors, ceilings, and their supports, including beams, joists, columns, penetration seals or closures, fire doors and fire dampers) that are rated, or capable of being rated, by approving laboratories in hours of resistance to fire and are used to prevent the spread of potential fire. Fire barriers that define the boundaries of a fire area should have a fire-resistance rating of at least 3 hours. All openings (doors, windows, penetrations, ductwork, etc) through fire barriers should be properly protected, sealed, and qualified by fire endurance testing to a fire resistance rating as required by the applicable codes, up to the same fire resistance rating of the fire barrier itself.

Fire Suppression - control and extinguishing of fires. Manual fire suppression includes the use of hoses, portable extinguishers, or fixed systems by plant personnel. Automatic fire suppression is the use of automatically actuated, fixed systems such as water (systems) sprinkler systems or low-pressure carbon dioxide system.

Fire Wall – a fire-resistance rated wall having protected openings, which restricts the spread of fire and extends continuously from the foundation to or through the roof, with sufficient

structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall.

Fire Zones - subdivisions of a fire area based on the fire hazards analysis that demonstrate that the fire protection systems and features within the fire zones provide an appropriate level of protection for the associated hazards.

Noncombustible Materials - materials having any one of the following characteristics:

- Materials no part of which can ignite and burn, support combustion, or release flammable vapors when subjected to a fire or heat; this includes wet resin in tanks or other similar potentially combustible materials that are continuously immersed in water are not considered a viable combustible for exposure fires due to the significant amount of heating that would be required to dry out the material before combustion could occur;
- Materials having a structural base of non-combustible material, as defined in the above item, with a surfacing not over 1/8 inch thick which has a flame spread rating not higher than 50 when measured using ASTM E84; or
- Materials, other than as described in the above two items, having a surface flame spread rating not higher than 25 without evidence of continued progressive combustion and of such composition that surfaces that would be exposed by cutting through the material in any way would not have flame spread rating higher than 25 without evidence of continued progressive combustion.

The flame-spread ratings referred to above are obtained according to NFPA 255.

Nuclear Safety-Related Structures, Systems and Components - are as defined in 10 CFR 50.2.

Sprinkler System - a network of piping connected to a reliable water supply to distribute the water throughout the area protected and discharges the water through sprinklers in sufficient quantity either to extinguish the fire entirely or to prevent its spread. The system, usually activated by heat, includes a controlling valve and a device for actuating an alarm when the system is in operation. The following categories of sprinkler systems are defined in NFPA 13:

- Wet-pipe System
- Dry-pipe System
- Preaction System
- Deluge System
- Combined Dry-pipe and Preaction System
- On-Off System

Standpipe and Hose Systems - fixed piping systems with hose outlets, hoses, and nozzles connected to a reliable water supply to provide effective fire hose streams to specific areas inside of the buildings.

Water Spray System - a special fixed pipe system connected to a reliable source of fire protection water supply and equipped with open-head spray nozzles for specific water discharge and distribution over surface or area to be protected. The piping system is connected to the water supply through an automatic or manually actuated valve to initiate the flow of water.

Wet Standpipe System - the ESBWR design utilizes a Class III wet standpipe system as defined by NFPA 14. The Class III wet standpipe system has been modified to provide connections for permanently installed 1.5-inch fire hoses, but also provides 2.5-inch and 1.5-inch hose connections made through one 2.5-inch hose valve and removable 2.5 by 1.5-inch reducer.

9A.2.4 Acceptance Criteria

The following basic guidelines have been used as criteria for the fire hazard analysis, to be conducted in accordance with Regulatory Guide 1.189 and NFPA 804:

- (1) The analysis is based on the existing design and on the currently specified, but not yet purchased, equipment. The analysis provides a basis for evaluating the fire protection characteristics and features of equipment as it is purchased.
- (2) Automatic sprinkler systems are provided in the ESBWR design for areas in which either installed combustible loading is large enough to warrant the installation or a significant transient combustible loading is most likely to occur as a result of combustibles introduced by normal maintenance operations. The fire hazard analysis is based on the introduction of transient combustibles to any area of the plant, subject to administrative controls. Control of combustible transient materials is assumed to comply with Regulatory Guide 1.39 for housekeeping requirements.

As described in Appendix 9B, the combustible loading limit for electrical areas has been conservatively determined as 1400 MJ/m² and the combustible loading limit for all other indoor areas has been conservatively determined as 700 MJ/m²; rooms that exceed these limits require automatic fire suppression. This approach conservatively assumes that all combustible material within a fire area instantaneously releases its net heat content upon ignition of the fire. Due to the considerable separation and fire barriers provided in the ESBWR plant layout, a detailed analysis or modeling of fire damage and plume temperatures resulting from any given fire was not considered necessary and has not been performed. This type of analysis could be performed later for an individual fire area if needed, but then could also include consideration of room height and volume, spatial location of combustibles and equipment, incomplete combustion, time-weighted heat release rates, thermal inertia of the structure, ventilation effects, response of installed automatic fire detection, response of installed fire suppression, and other relevant factors.

- (3) The buildings are generally of reinforced concrete construction. The walls, floors, and ceilings have 3-hour fire resistance ratings where required based on high combustible loadings (lubrication oil tank, for example) in the room or where an adjacent room contains equipment or systems from a different safety-related division. Corridors and stairwells that do not communicate between areas of different safety-related divisions may have walls and doors with a 2-hour minimum fire rating for personnel protection during egress from the areas. Non-concrete interior walls are constructed of metal studs and gypsum wallboard to the required fire resistance rating.
- (4) Doors penetrating rated fire barriers comply with NFPA ratings for that barrier. There are also doors that provide fire area separation that may not be labeled fire doors but do provide equivalent protection. Typically these are the doors for the personnel air lock into the reactor containment and the missile/tornado doors at the equipment access entrance to

the reactor building. The term "doors," where used in the analysis shall mean doors, frames, and hardware.

The use of 1.5-hour fire rated elevator doors in 3-hour fire-rated barriers does not compromise the fire barrier. Rather, section 6-1.2.2 of NFPA 804-1995 specifically allows 1.5-hour fire-rated doors in elevator shafts. No other applicable codes (IBC, NFPA 80, NFPA 101, NFPA 252, or ASME A17.1) require elevator doors to have a fire rating of more than 1.5 hours. None of the applicable codes address 3-hour fire-rated elevator shafts. It is not unusual for a door in a fire-rated wall to have a lower fire rating than the applicable fire wall, because the area on both sides of the door will normally be kept free of combustible material to ensure use of the door. Personnel evacuating from a fire are warned by signage at each elevator to use stairs (protected by 3-hour firewalls and doors) and not elevators during a fire.

- (5) The fireproofing of structural steel members, where required by calculation based on combustible loading, is accomplished by application of an UL-listed or FM-approved cementitious or ablative material, or by an UL-listed or FM-approved boxing design. The required fire rating determines the fireproofing material thickness. Gypsum board is utilized for protection of fireproofing in high traffic or office areas.
- (6) Surface finishes are specified to have a flame spread, fuel-contributed, and smoke-evolved index of 25 or less (Class A), determined by ASTM E84 (NFPA 255).
- (7) The use of plastic materials, including electrical cable insulation, is minimized in the ESBWR design.
- (8) Suspended ceilings are used in some areas of the plant. The ceilings, including the lighting fixtures, are of noncombustible construction.
- (9) The electrical cable fire-stops are tested to demonstrate a fire rating equal to the rating of the barrier they penetrate. As a minimum the penetrations meet the requirements of NUREG-1552, including Supplement 1. The tests are performed or witnessed by a representative of a qualified, independent testing laboratory. The documented test results for the acceptable fire-stops are made a part of the plant design records.
- (10) Electrical cable insulation in either solid metal enclosed raceways or concrete duct banks does not represent a combustible fire load and is excluded from the combustible loading analysis.
- (11) Control, power, or instrument cables and equipment of redundant systems used for bringing the reactor to hot shutdown and maintaining safe shutdown, are separated from each other by 3-hour rated fire barriers, except within the containment and where the equipment of more than one division is required to be located within a single fire area. Where multiple divisions of cable or equipment are located in the same fire area, the acceptability of the configuration is evaluated in Section 9A.6.
- (12) Certain areas of the plant have cable trays in stacked array. Where stacking of trays occurs, power cable, which is the most susceptible to internally generated fires, is routed in the uppermost tray to the greatest extent possible to provide isolation from other trays in the stack.

The fire loading of electrical cable in trays is based on flame-retardant, cross-linked polyethylene insulation having a maximum calorific value of 29.8 MJ/kg (12,834 Btu/lbm).

The cable trays are assumed to have the maximum (40%) design fill; actual cable fills may be lower.

The analysis uses 48.8 kilograms of insulation per square meter (10 lbm/ft^2) of tray. The combustible loading is based on maximum loading. As cables drop out of (exit) trays, the fire loading decreases. Cable insulation in completely enclosed (i.e., solid-bottom and solid-cover) trays or steel conduits is not considered to be a contributory, exposed combustible fire load to the area.

- (13) Cables for local indication are included in the safe shutdown analysis where failure of the cable could cause failure of functionally associated circuits or where required to provide either diagnostic or process parameter information for recovery.
- (14) Total reliance on a single fire suppression method is not used. At least two fire suppression methods are available to suppress a fire in each fire area. The plant design provides the following types of suppression methods and utilizes them in suitable combination for the fire hazard considered:
 - a. Automatic wet-pipe sprinkler system;
 - b. Automatic preaction sprinkler system;
 - c. Automatic dry-pipe sprinkler system;
 - d. Automatic preaction foam water sprinkler system;
 - e. Automatic foam water deluge system;
 - f. Automatic dry-pilot deluge system;
 - g. Internal manual water spray system;
 - h. Internal low pressure carbon dioxide flooding system;
 - i. Standpipe and hose racks;
 - j. Portable class ABC fire extinguishers;
 - k. Portable carbon dioxide class BC fire extinguishers;
 - 1. Portable class D fire extinguishers.
- (15) The design of the water supply system ensures delivery of water to the standpipe and hose rack systems concurrent with a single active failure. The standpipe system and one diesel driven fire pump, its water supply, its suction piping, and its discharge piping throughout the Reactor, Fuel, and Control Buildings are designed to remain functional following an SSE. The standpipes which supply fire water to hose stations covering safety-related equipment are contained within the concrete stairwells or dedicated concrete chases, and thus, are protected from other phenomena of less severity and greater frequency.
- (16) The effect of pipe breaks in fire suppression systems and protection methods for the effect of pipe breaks meet the criteria specified in Section 3.4 and Subsection 9.5.1.

- (17) The floor drains are sized to handle both leakage from a crack in the standpipes or simultaneous operation of two fire hose streams. See Subsection 9.3.3 for details of the plant drainage system.
- (18) Piping and cable tray penetrations are provided with fire-stops when penetrating fire rated barriers.
- (19) HVAC penetrations through 2-hour or 3-hour rated fire barriers are provided with fire dampers compatible with the rating of the fire barrier.

9A.2.5 Systems Required to Achieve Safe Shutdown in the Event of Fire

In case of a design basis fire, certain systems may be required when the Nuclear Steam Supply System (NSSS) is isolated from the main condenser during shutdown or accident conditions.

The main steam lines and feedwater lines provide the core-cooling path to and from the main condenser during normal operation at power or during startup or shutdown transients when the reactor is not isolated.

The safe shutdown functions are accomplished through interaction of various passive safetyrelated systems. The safe shutdown systems provide one or more of the following functions:

- Maintenance of reactor vessel water level;
- Pressure control and/or depressurization of the reactor pressure vessel;
- Heat removal;
- Heat sink;
- DC electrical power; and
- Indication and control.

Table 9A.2-2 shows the systems that provide one or more of the safe shutdown functions in the case of fire. The table includes the operating mode or modes for each system, the functions performed, reactor conditions that require system operation, the divisional assignment, the backup system, and Tier 2 references for system description.

A sufficient number of safety-related safe shutdown systems remain available during and following a design basis fire to achieve hot shutdown and maintain safe shutdown.

9A.2.6 Redundant Nonsafety Systems and Equipment

In case of a design basis fire, no nonsafety-related systems are required to achieve hot shutdown and maintain safe shutdown. Nonetheless, certain nonsafety-related systems and equipment include redundancy to provide operational flexibility and robustness. In general terms, the redundant components within a nonsafety-related system are referred to as Train A and Train B (and in some cases, Train C). To maintain the redundancy and robustness for these, fire-rated separation is provided between the redundant Train A and Train B (and Train C, where applicable) components for these certain nonsafety-related systems.

The initial design of the ESBWR has included redundancy within the following nonsafety-related systems:

- Reactor Water Cleanup / Shutdown Cooling System;
- Reactor Component Cooling Water System;
- Plant Service Water System
- Fuel and Auxiliary Pool Cooling System;
- RB and CB sumps in the Equipment and Floor Drains System;
- RB HVAC System;
- FB HVAC System;
- CB HVAC System;
- Non-IE DCS System;
- Instrument Air System;
- Chilled Water System;
- Seismic category I firepumps within the Fire Protection System;
- Off-site power supplies (transformers);
- On-site power supplies (diesel-generators and auxiliary equipment);
- Electrical power distribution to all of the above.

Fire Protection Codes and Standards

Refer to Tables 1.9-21, 1.9-22, and 1.9-23 for applicable editions.

28 CFR 36	Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities			
29 CFR 1910	Occupational Safety and Health Standards			
29 CFR 1926	Safety and Health Regulations for Construction			
10 CFR 50	Licensing of Production/Utilization Facilities			
UL Directory	Fire Protection Equipment Directory			
FM	Factory Mutual Approval Guide			
ANI Manual	Basic Fire Protection for Nuclear Power Plants			
NFPA 10	Standard for Portable Fire Extinguishers			
NFPA 11	Standard for Low-, -Medium, and -High-Expansion Foam Systems			
NFPA 12	Standard on Carbon Dioxide Extinguishing Systems			
NFPA 13	Standard for the Installation of Sprinkler Systems			
NFPA 14	Standard for the Installation of Standpipe and Hose Systems			
NFPA 15	Standard for Water Spray Fixed Systems for Fire Protection			
NFPA 16	Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems			
NFPA 20	Standard for the Installation of Stationary Pumps for Fire Protection			
NFPA 22	Standard for Water Tanks for Private Fire Protection			
NFPA 24	Standard for the Installation of Private Fire Service Mains and their Appurtenances			
NFPA 30	Flammable and Combustible Liquids Code			
NFPA 37	Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines			
NFPA 50A	Standard for Gaseous Hydrogen Systems at Consumer Sites			

Fire Protection Codes and Standards

Refer to Tables 1.9-21, 1.9-22, and 1.9-23 for applicable editions.

NFPA 70	National Electrical Code
NFPA 72	National Fire Alarm Code
NFPA 75	Standard for the Protection of Information Technology Equipment
NFPA 80	Standard for Fire Doors and Windows
NFPA 80A	Recommended Practice for Protection of Buildings from Exterior Fire Exposures
NFPA 90A	Standard for the Installation of Air-Conditioning and Ventilating Systems
NFPA 92A	Recommended Practice for Smoke-Control Systems
NFPA 101	Life Safety Code
NFPA 204	Standard for Smoke and Heat Venting
NFPA 251	Standard Methods of Tests of Fire Endurance of Building Construction and Materials
NFPA 252	Standard Methods of Fire Tests of Door Assemblies
NFPA 255	Standard Method of Test of Surface Burning Characteristics of Building Materials
NFPA 497	Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas
NFPA 780	Standard for the Installation of Lightning Protection Systems
NFPA 804	Standard for Fire Protection for Advanced Light Water Reactor Electric Generating Plants
NFPA 1961	Standard on Fire Hose
NFPA 1963	Standard for Fire Hose Connections
NFPA 1964	Standard for Spray Nozzles
ASHRAE 15	Safety Standard for Refrigeration Systems
ASME A17.1	Safety Code for Elevators and Escalators

Fire Protection Codes and Standards

Refer to Tables 1.9-21, 1.9-22, and 1.9-23 for applicable editions.

ASTM E84	tandard Test Method for Fire Tests of Building Materials					
IBC	International Building Code					
IFC	International Fire Code					
IEEE 383	Standard for Qualifying Class 1E Electric Cables and Field Splices for Nuclear Power Generating Stations					
IEEE 384	Standard Criteria for Independence of Class 1E Equipment and Circuits					
IEEE 603	Standard Criteria for Safety Systems for Nuclear Power Generating Stations					
Regulatory Guide 1.39	Housekeeping Requirements for Water-Cooled Nuclear Power Plants					
Regulatory Guide 1.75	Physical Independence of Electric Systems					
Regulatory Guide 1.189	Fire Protection for Operating Nuclear Power Plants					
NUREG-0800, Section 9.5.1	Fire Protection Program					
NUREG-1552	Fire Barrier Penetration Seals in Nuclear Power Plants					

Systems Required to Achieve Safe Shutdown in the Event of Fire

System	Function	Reactor Condition	Division	Backup System	Tier 2 Ref.	Remarks
ICS A	1/2/3/4	Isolation	Ι	ICS B ICS C ICS D	5.4.6	Closed loop to and from reactor vessel.
ICS B	1/2/3/4	Isolation	II	ICS A ICS C ICS D	5.4.6	Closed loop to and from reactor vessel.
ICS C	1/2/3/4	Isolation	III	ICS A ICS B ICS D	5.4.6	Closed loop to and from reactor vessel.
ICS D	1/2/3/4	Isolation	IV	ICS A ICS B ICS C	5.4.6	Closed loop to and from reactor vessel.
GDCS A	1	Depressurized	Ι	GDCS B GDCS C GDCS D	6.3.2	
GDCS B	1	Depressurized	II	GDCS A GDCS C GDCS D	6.3.2	
GDCS C	1	Depressurized	III	GDCS A GDCS B GDCS D	6.3.2	
GDCS D	1	Depressurized	IV	GDCS A GDCS B GDCS C	6.3.2	

Systems Required to Achieve Safe Shutdown in the Event of Fire

System	Function	Reactor Condition	Division	Backup System	Tier 2 Ref.	Remarks
ADS A	2	Isolated	Ι	ADS B, C, D ICS B, C, D	6.3.3	
ADS B	2	Isolated	II	ADS A, C, D ICS A, C, D	6.3.3	
ADS C	2	Isolated	III	ADS A, B, D ICS A, B, D	6.3.3	
ADS D	2	Isolated	IV	ADS A, B, C ICS A, B, C	6.3.3	
PCCS A	3/4	Post Depressurization	_	PCCS B, C, D, E, F	6.2.2	Closed piping connections to GDCS and suppression pools.
PCCS B	3/4	Post Depressurization		PCCS A, C, D, E, F	6.2.2	Closed piping connections to GDCS and suppression pools.
PCCS C	3/4	Post Depressurization	_	PCCS A, B, D, E, F	6.2.2	Closed piping connections to GDCS and suppression pools.
PCCS D	3/4	Post Depressurization		PCCS A, B, C, E, F	6.2.2	Closed piping connections to GDCS and suppression pools.
PCCS E	3/4	Post Depressurization		PCCS A, B, C, D, F	6.2.2	Closed piping connections to GDCS and suppression pools.

Systems Required to Achieve Safe Shutdown in the Event of Fire

System	Function	Reactor Condition	Division	Backup System	Tier 2 Ref.	Remarks
PCCS F	3/4	Post Depressurization		PCCS A, B, C, D, E	6.2.2	Closed piping connections to GDCS and suppression pools.
Div I instrument power & signals	5/6/7	All	Ι	Division II, III, and/or IV	7.2, 7.3	
Div II instrument power & signals	5/6/7	All	II	Division I, III, and/or IV	7.2, 7.3	
Div III instrument power & signals	5/6/7	All	III	Division I, II, and/or IV	7.2, 7.3	
Div IV instrument power & signals	5/6/7	All	IV	Division I, II, and/or III	7.2, 7.3	

Functions:

1 - maintain reactor water level

2 - depressurize the reactor vessel

- 3 heat removal
- 4 heat sink

5 - electrical power

6 - control (includes logic systems power for initiation of RPS and safe shutdown systems)

7 - monitoring/indication

Figure 9A.2-1. Nuclear Island Fire Protection Zones ESBWR DCD EL -11500

Design Control Document/Tier 2

Figure 9A.2-2. Nuclear Island Fire Protection Zones ESBWR DCD EL -6400

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-15 **Design Control Document/Tier 2**

Figure 9A.2-3. Nuclear Island Fire Protection Zones ESBWR DCD EL -1000

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-16 **Design Control Document/Tier 2**
Figure 9A.2-4. Nuclear Island Fire Protection Zones ESBWR DCD EL 4650

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-17

Figure 9A.2-5. Nuclear Island Fire Protection Zones ESBWR DCD EL 9060

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-18

Figure 9A.2-6. Nuclear Island Fire Protection Zones ESBWR DCD EL 13570

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-19

Figure 9A.2-7. Nuclear Island Fire Protection Zones ESBWR DCD EL 17500

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-20

Figure 9A.2-8. Nuclear Island Fire Protection Zones ESBWR DCD EL 27000

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-21

Figure 9A.2-9. Nuclear Island Fire Protection Zones ESBWR DCD EL 34000

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-22

Figure 9A.2-10. Nuclear Island Fire Protection Zones ESBWR DCD Section "A-A"

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-23

Figure 9A.2-11. Nuclear Island Fire Protection Zones ESBWR DCD Section "B-B"

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-24

Figure 9A.2-12. Turbine Building Fire Protection Zones ESBWR DCD EL -1400

Figure 9A.2-13. Turbine Building Fire Protection Zones ESBWR DCD EL 4650

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-26

Figure 9A.2-14. Turbine Building Fire Protection Zones ESBWR DCD EL 12000

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-27

Figure 9A.2-15. Turbine Building Fire Protection Zones ESBWR DCD EL 20000

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-28

Figure 9A.2-16. Turbine Building Fire Protection Zones ESBWR DCD EL 28000

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-29

Figure 9A.2-17. Turbine Building Fire Protection Zones ESBWR DCD EL (Various)

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-30

Figure 9A.2-18. Turbine Building Fire Protection Zones ESBWR DCD Section A-A

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-31

Figure 9A.2-19. Turbine Building Fire Protection Zones ESBWR DCD Section B-B

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-32

Figure 9A.2-20. Radwaste Building Fire Protection Zones ESBWR DCD EL -9350

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-33

Figure 9A.2-21. Radwaste Building Fire Protection Zones ESBWR DCD EL -2350

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-34

Figure 9A.2-22. Radwaste Building Fire Protection Zones ESBWR DCD EL 4650

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-35

Figure 9A.2-23. Radwaste Building Fire Protection Zones ESBWR DCD EL 10650

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-36

Figure 9A.2-24. Radwaste Building Fire Protection Zones ESBWR DCD Section A-A

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-37

Figure 9A.2-25. Electrical Building Fire Protection Zone ESBWR DCD EL 4650

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-38

Figure 9A.2-26. Electrical Building Fire Protection Zone ESBWR DCD EL 9800

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-39

Figure 9A.2-27. Electrical Building Fire Protection Zone ESBWR DCD EL 13000

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-40

Figure 9A.2-28. Electrical Building Fire Protection Zone ESBWR DCD EL 18000

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-41

Figure 9A.2-29. Electrical Building Fire Protection Zone ESBWR DCD EL 22000

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-42

Figure 9A.2-30. Electrical Building Fire Protection Zone ESBWR DCD EL 27000

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-43

Figure 9A.2-31. Electrical Building Fire Protection Zone ESBWR DCD EL (Various)

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-44

Figure 9A.2-32. Electrical Building Fire Protection Zone ESBWR DCD Section A-A

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-45

Figure 9A.2-33. Site Fire Protection Zone ESBWR DCD Plot Plan

{{{Security-Related Information - Withhold Under 10 CFR 2.390.}}} 9A.2-46

9A.3 ANALYSIS APPROACH

9A.3.1 Review Data

The fire hazards analysis is based on a review of every fire area, using the defense in depth approach from NFPA 804 and Regulatory Guide 1.189. Defense in depth is defined as a principle aimed at providing a high degree of fire protection by inclusion of these three concepts: 1) preventing potential fires from starting; 2) quickly detecting those fires that occur, and promptly controlling and extinguishing fires to limit damage; and, 3) providing structural protection (such as fire-rated barriers) for buildings, equipment, and circuits so that a fire that is not promptly extinguished will not prevent safe shutdown, cause loss of life, or result in radioactive release in excess of 10 CFR 20 limits. None of the defense in depth concepts is complete by itself.

The analysis is based on a review of every room for the Reactor Building, Fuel Building, Control Building, Turbine Building, Radwaste Building, Electrical Building, and Yard, as well as the overall design acceptance criteria for the Pump House, Guard House, Hot Machine Shop, Service Water/Water Treatment Building, Cold Machine Shop, Warehouse, Training Center, Service Building, Auxiliary Boiler Building, and Administration Building. The following data has been gathered for each fire area or room reviewed:

- (1) Identification for the safety-related equipment within each fire area. Non safety-related equipment is not required for safe shutdown;
- (2) Identification of fire areas containing radioactive material that could be released to the exclusion area or beyond should a fire occur in that area;
- (3) Definition of the rated fire barriers surrounding a specific room or rooms that allow classifying the room or rooms as a separate fire area. Non-rated barriers for which an equivalency to a fire barrier is claimed are also identified;
- (4) A specific listing of types, quantities and characteristics of significant combustibles within a fire area that could constitute a combustible load;
- (5) Quantitative listing of fire loadings that represent the combustibles identified for each fire area;
- (6) Listing of all the fire detection and suppression capabilities provided and their accessibility for each room. Note that fire detection will also be installed within HVAC ductwork as required by NFPA 90A but is not credited in the fire hazards analysis for early detection of any fire within a single fire area;
- (7) An analysis of each fire area identifying the design criteria employed in providing fire protection for the equipment within the fire area. Safety-related equipment is separated on a divisional basis by 3-hour rated fire barriers, except equipment mounted in the control room or containment, as well as for equipment covered by special cases that are discussed in Section 9A.6 (for more information on safety-related equipment fire separation and safe shutdown, see Subsection 9.5.1). Fire detection, fire suppression, and fire stop capabilities are also discussed in the analysis;

- (8) An analysis defining the worst-case consequences of the fire for each fire area. This is stated as loss of safe shutdown function and identifies the divisional backup capability available for safety-related systems;
- (9) An analysis of each fire area addressing the consequences of fire, if the fire protection system functions as designed. The fire protection system is defined as having the capability to detect, contain, and extinguish the fire. The ability to restrict the fire to a discrete area, the result of the introduction of water to the fire area, and the capability of extinguishing the fire by various means of suppression are stated. See Section 3.4, for a discussion of pipe break consequences;
- (10) Design provisions for protecting the functional capability of safety-related systems and associated cabling from the results of inadvertent operation, careless operation, or rupture of the extinguishing systems in each fire area are stated;
- (11) The means of containing or inhibiting the progress of a fire in each fire area (defined as the use of a fire-resisting enclosure or barrier, fire-stops at wall penetrations, ventilation fire dampers, curbs, or fire doors into the area); and
- (12) Room numbers are shown on the analysis pages that conform to those shown on the fire zone drawings.

9A.3.2 Steam Tunnel Barrier Exception

The steam tunnel in the Reactor Building opens into the Turbine Building without a barrier wall to allow venting of steam to the Turbine Building in the event of a major steam line leak in the steam tunnel within the Reactor Building. There are no openings in the steam tunnel that are not protected by either fire dampers or doors, including the walls, floors, and ceilings. An automatic, open-head water spray system is provided to serve as a water curtain fire barrier between the Turbine Building and Reactor Building portions of the steam tunnel.

9A.3.3 Exceptions to Separation Criteria

A specific analysis is prepared for each fire area in the containment and Main Control Room that contains redundant systems of safety-related equipment or electrical cables. This analysis confirms that adequate protection has been provided by means of separation by distance, physical barriers, electrical isolation, electrical circuit characteristics, or adequate backup systems. The analyses are in Section 9A.6, Special Cases.

9A.3.4 Exceptions to Penetration Requirements

The Drywell Inerting System supply ductwork (piping) for the wetwell and the drywell passes through a fire barrier but does not have fire dampers. These consist of two supply lines (each 350 mm (14 in.) nominal diameter) and two exhaust lines (one 350 mm (14 in.) nominal diameter and one 400 mm (16 in.) nominal diameter). There are two containment isolation valves for each supply and exhaust piping penetration. The isolation valves are normally closed except during plant outage periods, when smoke removal could be accomplished without interruption if a fire occurs.

9A.3.5 Wall Deviations

The wall descriptions below represent anticipated deviations from tested and approved 3-hr, fireresistive assemblies. The designs were previously submitted and approved in the GESSAR II SSAR.

The Type 1 wall design exceeds the design of the tested and approved assembly from which it was adapted. The Type 2 assembly requires a UL test.

Type 1 wall—The Type 1 wall is designed with 0.15-meter (6-in) metal studs at 0.30-meter (12-in) on center (seismic design) with three layers of 0.016-meter (5/8-in) fire code gypsum board on each side of the studs. The design is adapted from ICBO 1495 for a 3-hour partition. The only deviation from the standard is that the gage thickness of the structural members has been increased to meet higher seismic requirements.

Type 2 wall—The Type 2 wall is a variation of Type 1 with 0.15-meter (6-in) metal studs at 0.30-meter (12-in) on center between 0.15-meter (6-in) steel, wide-flange columns at 1.22-meter (4-ft) on center. Three layers of 0.016-meter (5/8-in) fire code gypsum board line one side while 0.013-meter (1/2-in) thick steel plate for bullet resistance and two layers of 0.016-meter (5/8-in) fire code gypsum board line the other side.

9A.3.6 Door Deviations

Certain doors throughout the facility have a multi-purpose function such as fire, tornado, pressure, missile, seismic, water tight, and/or air tight. Where possible, these doors are rated and/or labeled doors and are identified as rated doors.

When other criteria require the manufacturer to design the door for some other purpose, the door is identified as equivalent to a fire rated door. The doors, except for the Reactor Building equipment access door, are required to have a UL or FM label. Where the door is not constructed as a fire door, such as a containment personnel airlock, it is identified by its main function.

The use of 1.5-hour fire rated elevator doors in 3-hour fire-rated barriers does not compromise the fire barrier. Rather, section 6-1.2.2 of NFPA 804-1995 specifically allows 1.5-hour fire-rated doors in elevator shafts. No other applicable codes (IBC, NFPA 80, NFPA 101, NFPA 252, or ASME A17.1) require elevator doors to have a fire rating of more than 1.5 hours. None of the applicable codes address 3-hour fire-rated elevator shafts. It is not unusual for a door in a fire-rated wall to have a lower fire rating than the applicable fire wall, because the area on both sides of the door will normally be kept free of combustible material to ensure use of the door. Personnel evacuating from a fire are warned by signage at each elevator to use stairs (protected by 3-hour firewalls and doors) and not elevators during a fire.

9A.3.7 Basemats

In general, concrete basemats are not required to be fire-rated because of the lack of any fire hazard in the ground beneath the basemats. The substantial thickness of concrete basemats would provide a large fire rating, if so required.

9A.3.8 Smoke Removal

See Subsection 9.5.1.11 for details of smoke removal provisions in safety-related buildings. In general, smoke, heat, and products of combustion can be exhausted from a fire area by operation of the HVAC system in the purge or exhaust mode, once the fire has been extinguished by the fire protection system.

9A.4 FIRE HAZARD AND SAFE SHUTDOWN ANALYSIS SUMMARY

For fire hazard and safe shutdown analysis for each individual fire area (assuming that automatic and manual fire suppression equipment does not function), see Tables 9A.5-1 through 9A.5-7.

9A.4.1 Reactor Building

As shown on the fire zone drawings (Figures 9A.2-1 through 9A.2-11), with the exception of the Drywell/Containment and Main Steam Tunnel, the Reactor Building is subdivided by 3-hour fire-rated concrete barriers to inhibit fire spread and to limit fire damage to not more than one safety division. This arrangement allows any combination of the remaining three divisions to bring the reactor to hot standby and then cold shutdown conditions.

Damage from a fire in the upper drywell is limited to one train of safe shutdown components because of the separation of redundant components, low combustible loading, and primary containment inerting; exceptions are justified. Redundant valves are spatially separated and are designed to fail as-is on loss of actuation power.

During plant shutdown, reactor cooling is provided by either the Reactor Water Cleanup/Shutdown Cooling System (RWCU/SDC) or the Fuel and Auxiliary Pools Cooling System (FAPCS). A fire in the lower drywell, could affect the operation of the RWCU/SDC, but not the FAPCS system to maintain core cooling. A fire in the upper drywell does not prevent either the RWCU/SDC or the FAPCS from providing core cooling through the feedwater lines. A fire in the wetwell does prevent either the RWCU/SDC or FAPCS from providing core cooling. The redundant RWCU/SDC, FAPCS, and Reactor Component Cooling Water System (RCCWS) pumps are powered from separate diesel generator backed electrical load groups.

A fire within the containment does not prevent the FAPCS from providing spent fuel pool cooling. The fire protection system can be used through a cross-connect to provide makeup water to the FAPCS.

Damage from a fire in the lower drywell is also limited to one train of safe shutdown components because of the separation of redundant components, low combustible loading, and primary containment inerting during power operation; and therefore exceptions are justified. Redundant valves are spatially separated and are designed to fail safe on loss of actuation power. Although fire damage may result to both Control Rod Drive (CRD) system and Hydraulic Control Unit (HCU) components from a postulated fire within the lower drywell during a plant outage, there would be no effect to plant safe shutdown because all control rods would already have been inserted into the reactor vessel at the onset of the outage and prior to removing the inerting environment. Further backup of reactor scram capability and maintenance of safe shutdown can be provided by other systems (such as Standby Liquid Control) that are located in other fire areas of the plant.

No additional means of fire detection or suppression is provided for the Isolation Condenser (IC), Passive Containment Cooling (PCC), Buffer, Dryer/Separator Storage, Reactor Well, Suppression, and IC/PCC Expansion Pools which are normally filled with water.

Access to the Steam Tunnel is provided by an opening between the Reactor and Turbine Buildings, and is protected by an open head spray water curtain and by a Class A shielded door from the Reactor Building.

A preaction sprinkler system is provided throughout the CRD pump room to provide personnel protection, allow egress, and limit the spread of the fire.

To prevent damage from inadvertent or careless operation, as well as rupture of the fire suppression system, the following design features are included:

- Seismic design of the fire suppression system piping;
- Safe shutdown components located in the primary containment are normally designed to operate in 100% relative humidity environments;
- Use of preaction type sprinkler systems, supervised with pressurized air and requiring multiple indications of fire prior to discharging water from sprinkler heads, over redundant or critical plant equipment such as CRD pumps;
- Location of the manual suppression systems within stairwells and outside of rooms containing safety-related components to avoid spray water damage to electrical components;
- Seismic design of standpipes in the Reactor Building;
- Installation of electrical equipment above expected flood level heights;
- Provisions for curbs around open hatches;
- Use of watertight doors, where required, to protect equipment.

Post-fire recovery for a design basis fire contained to a single Reactor Building fire area would involve all the components (restoration and replenishment of fire protection equipment, forensic investigation, overhaul and salvage, demolition, reconstruction to original design, and testing of restored systems to original requirements) typical of a major industrial fire, as well as the additional radiological, security access, and quality assurance controls unique to a nuclear plant. However, the resources needed to perform this restoration should be no more than that required for a major plant refueling outage. Redundancy provided in safety-related and nonsafety-related systems allows quicker restoration of plant operation, even if at a reduced power level. The inclusion of equipment access paths and hatches for all areas of the Reactor Building not only facilitates original plant construction but also major equipment replacement. Due to these factors, the potential for post-fire recovery for a design basis fire contained to a single Reactor Building fire area is considered better than currently operating nuclear plants.

Fire protection within the Reactor Building is not affected by naturally occurring hazards due to the following reasons:

- Fire barriers are an integral part of the Reactor Building, designed and installed to withstand a Safe Shutdown Earthquake (SSE);
- Fire suppression system piping in the Reactor Building is designed and installed to withstand an SSE and remain operational;
- Fire detection and alarm in the Reactor Building is seismically mounted to not collapse; repair or restoration of fire detection and alarm would only require replacement of individual failed components from stored spares;
• Protection of the fire protection system in the Reactor Building from design-basis storms, tornados, and floods is provided by the Reactor Building structure itself.

9A.4.2 Fuel Building

As shown on the fire zone drawings (Figures 9A.2-1 through 9A.2-11), the Fuel Building is subdivided by 3-hour fire-rated concrete barriers to inhibit fire spread and to limit fire damage to not more than one redundant train of nonsafety-related equipment. The Fuel Building does not contain any safety-related or safe shutdown components, and as such, a fire in the Fuel Building does not affect any of the four divisions used to bring the reactor to hot standby and then cold shutdown conditions.

No additional means of fire detection or suppression is provided for the Spent Fuel Pool which is normally filled with water.

To prevent damage from inadvertent or careless operation, as well as rupture of the fire suppression system, the following design features are included:

- Location of the manual suppression systems within stairwells and outside of rooms containing safety-related components to avoid spray water damage to electrical components;
- Seismic design of standpipes in the Fuel Building;
- Provision of adequately sized floor drains, curbs, equipment bases, and flood containment boundaries to handle the suppression flow;
- Installation of electrical equipment above expected flood level heights;
- Provisions for curbs around open hatches.

Post-fire recovery for a design basis fire contained to a single Fuel Building fire area would involve all the components (restoration and replenishment of fire protection equipment, forensic investigation, overhaul and salvage, demolition, reconstruction to original design, and testing of restored systems to original requirements) typical of a major industrial fire, as well as the additional radiological, security access, and quality assurance controls unique to a nuclear plant. However, the resources needed to perform this restoration should be no more than that required for a major plant refueling outage. Redundancy provided in safety-related and nonsafety-related systems allows quicker restoration of plant operation, even if at a reduced power level. The inclusion of equipment access paths and hatches for all areas of the Fuel Building not only facilitates original plant construction but also major equipment replacement. Due to these factors, the potential for post-fire recovery for a design basis fire contained to a single Fuel Building fire area is considered better than currently operating nuclear plants.

Fire protection within the Fuel Building is not affected by naturally occurring hazards due to the following reasons:

- Fire barriers are an integral part of the Fuel Building, designed and installed to withstand a Safe Shutdown Earthquake (SSE);
- Fire suppression system piping in the Fuel Building is designed and installed to withstand an SSE and remain operational;

- Fire detection and alarm in the Fuel Building is seismically mounted to not collapse; repair or restoration of fire detection and alarm would only require replacement of individual failed components from stored spares;
- Protection of the fire protection system in the Fuel Building from design-basis storms, tornados, and floods is provided by the Fuel Building structure itself.

9A.4.3 Control Building

As shown on the fire zone drawings (Figures 9A.2-1 through 9A.2-11), with the exception of the Main Control Room, the Control Building is subdivided by 3-hour fire-rated concrete barriers to inhibit fire spread and to limit fire damage to not more than one safety division. This arrangement allows any combination of the remaining three divisions to bring the reactor to hot standby and then cold shutdown conditions.

The nonsafety-related MCR HVAC has redundant air handling units, but uses common ductwork. Where the common ductwork for one air handling unit could be exposed to fire involving the other redundant air handling unit, the HVAC ductwork will be wrapped or encapsulated in 3-hour fire rated material.

Operators can evacuate the Main Control Room after scramming the reactor. The Safety System and Logic Control (SSLC) automatically actuates the safety systems. The postulated fire assumes loss of all component functions in within the Main Control Room, and spurious actuations are considered in the analysis. In order to cool the plant down, the operators can control the nonsafety-related systems from either Remote Shutdown System (RSS) panel, located in separate fire areas within the Reactor Building.

There are very few cable trays in the Main Control Room Complex. Cable access is through the floor from the divisional rooms below or overhead from the non-safety DCIS rooms above, and consists of power cables in flexible metallic or rigid steel conduit, fiber optic cables for the multiplexed control and instrumentation cables, and hard-wired control cables. There is a raised computer floor to allow distribution of the cables via conduit (flex or rigid) or cable pathways. There is a suspended ceiling; only cables associated with nonsafety-related lighting, the fire alarm system, and communication are routed above the false ceiling. These cables are also in conduit.

Paper within the Control Room Complex is required to be stored in approved containers (cabinets, file cabinets, waste baskets) except when in use.

Manual water spray systems are provided internal to each of the charcoal filters, to provide property protection and limit the spread of the fire.

To prevent damage from inadvertent or careless operation, as well as rupture of the fire suppression system, the following design features are included:

- Location of the manual suppression systems within stairwells and outside of rooms containing safety-related components to avoid spray water damage to electrical components;
- Seismic design of standpipes in the Control Building;

- Provision of adequately sized floor drains, curbs, equipment bases, and flood containment boundaries to handle the suppression flow;
- Installation of electrical equipment above expected flood level heights;
- Provisions for curbs around open hatches.

Post-fire recovery for a design basis fire contained to a single Control Building fire area would involve all the components (restoration and replenishment of fire protection equipment, forensic investigation, overhaul and salvage, demolition, reconstruction to original design, and testing of restored systems to original requirements) typical of a major industrial fire, as well as the additional security access and quality assurance controls unique to a nuclear plant. However, the resources needed to perform this restoration should be no more than that required for a major plant refueling outage. Redundancy provided in safety-related and nonsafety-related systems allows quicker restoration of plant operation, even if at a reduced power level. The inclusion of equipment access paths and hatches for all areas of the Control Building not only facilitates original plant construction but also major equipment replacement. Due to these factors, the potential for post-fire recovery for a design basis fire contained to a single Control Building fire area is considered better than currently operating nuclear plants.

Fire protection within the Control Building is not affected by naturally occurring hazards due to the following reasons:

- Fire barriers are an integral part of the Control Building, designed and installed to withstand a Safe Shutdown Earthquake (SSE);
- Fire suppression system piping in the Control Building is designed and installed to withstand an SSE and remain operational;
- Fire detection and alarm in the Control Building is seismically mounted to not collapse; repair or restoration of fire detection and alarm would only require replacement of individual failed components from stored spares;
- Protection of the fire protection system in the Control Building from design-basis storms, tornados, and floods is provided by the Control Building structure itself.

9A.4.4 Turbine Building

As shown on the fire zone drawings (Figures 9A.2-12 through 9A.2-19), the Turbine Building is subdivided by 3-hour fire-rated concrete barriers to inhibit fire spread and to limit fire damage. The Turbine Building does not contain any safety-related or safe shutdown components, and as such, a fire in the Turbine Building does not affect any of the four divisions used to bring the reactor to hot standby and then cold shutdown conditions.

Curbs are provided at doorways and around equipment containing significant amount of oil to prevent the spread of flammable liquids.

An automatic deluge system is provided in the open steam tunnel, as a water curtain to provide the separation between Reactor and Turbine Buildings equivalent to a 3-hour fire-rated concrete barrier, and to limit the spread of the fire.

A wet-pipe sprinkler system is provided throughout the areas below the turbine that could be exposed to spreading oil, to provide personnel protection, allow egress, and limit the spread of the fire.

Preaction sprinkler systems are provided throughout the feedwater pump room and on the steam turbine bearings, to provide personnel protection, allow egress, and limit the spread of the fire.

A dry-pipe sprinkler system is provided throughout the main equipment access bay, to provide personnel protection, allow egress, and limit the spread of the fire.

Dry-pilot deluge systems are provided on the EHC skid and seal oil units, to provide property protection and limit the spread of the fire.

A foam deluge system is provided throughout the lube oil tank room, to provide property protection and limit the spread of the fire.

Manual water spray systems are provided internal to each of the off-gas charcoal adsorbers, to provide property protection and limit the spread of the fire.

To prevent damage from inadvertent or careless operation, as well as rupture of the fire suppression system, the following design features are included:

- Use of preaction type sprinkler systems, supervised with pressurized air and requiring multiple indications of fire prior to discharging water from sprinkler heads, over redundant or critical plant equipment such as turbine bearings;
- Location of the manual suppression systems within stairwells and outside of rooms containing electrical components to avoid spray water damage to electrical components;
- Provision of adequately sized floor drains, curbs, equipment bases, and flood containment boundaries to handle the suppression flow;
- Installation of electrical equipment above expected flood level heights;

Post-fire recovery for a design basis fire contained to a single Turbine Building fire area would involve all the components (restoration and replenishment of fire protection equipment, forensic investigation, overhaul and salvage, demolition, reconstruction to original design, and testing of restored systems to original requirements) typical of a major industrial fire, as well as the additional radiological, security access, and quality assurance controls unique to a nuclear plant. However, the resources needed to perform this restoration should be no more than that required for a major plant refueling outage. Redundancy provided in nonsafety-related systems allows quicker restoration of plant operation, even if at a reduced power level. The inclusion of equipment access paths and hatches for all areas of the Turbine Building not only facilitates original plant construction but also major equipment replacement. Due to these factors, the potential for post-fire recovery for a design basis fire contained to a single Turbine Building fire area is considered better than currently operating nuclear plants.

The following features minimize or mitigate the effect of naturally occurring hazards on fire protection within the Turbine Building:

• Fire barriers are an integral part of the Turbine Building, designed and installed as required by the IBC for applicable seismic, wind, hydrodynamic, etc, conditions;

- Fire suppression system piping in the Turbine Building is designed and installed to meet NFPA 13 seismic requirements;
- Protection of the fire protection system in the Turbine Building from design-basis storms, tornados, and floods is provided by the Turbine Building structure itself.

9A.4.5 Radwaste Building

As shown on the fire zone drawings (Figures 9A.2-20 through 9A.2-24), the Radwaste Building is subdivided by 3-hour fire-rated concrete barriers to inhibit fire spread and to limit fire damage. The Radwaste Building does not contain any safety-related or safe shutdown components, and as such, a fire in the Radwaste Building does not affect any equipment required to bring the reactor to hot standby and then cold shutdown conditions.

A wet-pipe sprinkler system is provided throughout the radwaste handling portion of the Radwaste Building, to provide personnel protection, allow egress, and limit the spread of the fire.

A manual water spray system is provided internal to the charcoal filter, to provide property protection and limit the spread of the fire.

Although the Radwaste Building contains radiological materials, fire within any given fire area does not create a radiological release in excess of 10 CFR 20 limits.

To prevent damage from inadvertent or careless operation, as well as rupture of the fire suppression system, the following design features are included:

- Location of the manual suppression systems within stairwells and outside of rooms containing electrical components to avoid spray water damage to electrical components;
- Provision of adequately sized floor drains, curbs, equipment bases, and flood containment boundaries to handle the suppression flow;
- Installation of electrical equipment above expected flood level heights;
- Provisions for curbs around open hatches.

Post-fire recovery for a design basis fire contained to a single Radwaste Building fire area would involve all the components (restoration and replenishment of fire protection equipment, forensic investigation, overhaul and salvage, demolition, reconstruction to original design, and testing of restored systems to original requirements) typical of a major industrial fire, as well as the additional radiological, security access, and quality assurance controls unique to a nuclear plant. However, the resources needed to perform this restoration should be no more than that required for a major plant refueling outage. Redundancy provided in nonsafety-related systems allows quicker restoration of plant operation, even if at a reduced power level. The inclusion of equipment access paths and hatches for all areas of the Radwaste Building not only facilitates original plant construction but also major equipment replacement. Due to these factors, the potential for post-fire recovery for a design basis fire contained to a single Radwaste Building fire area is considered better than currently operating nuclear plants.

The following features minimize or mitigate the effect of naturally occurring hazards on fire protection within the Radwaste Building:

- Fire barriers are an integral part of the Radwaste Building, designed and installed as required by the IBC for applicable seismic, wind, hydrodynamic, etc, conditions;
- Fire suppression system piping in the Radwaste Building is designed and installed to meet NFPA 13 seismic requirements;
- Protection of the fire protection system in the Radwaste Building from design-basis storms, tornados, and floods is provided by the Radwaste Building structure itself.

9A.4.6 Electrical Building

As shown on the fire zone drawings (Figures 9A.2-25 through 9A.2-32), the Electrical Building is subdivided by 3-hour fire-rated concrete barriers to inhibit fire spread and to limit fire damage to not more than one redundant train of nonsafety-related equipment. The Electrical Building does not contain any safety-related or safe shutdown components, and as such, a fire in the Electrical Building does not affect any of the four divisions used to bring the reactor to hot standby and then cold shutdown conditions.

A fire within any of the fire areas associated with either diesel generator is assumed to damage all components within the fire area resulting in loss of all function and consequential damage, including a spurious operation of any one component. Damage to the components in the fire area only affects the operation of one of the two nonsafety-related diesel generators and does not affect the passive safe shutdown components or redundant nonsafety-related diesel generator or train of active components from performing their functions.

Curbs are provided at doorways and around equipment containing significant amount of oil, to prevent the spread of flammable liquids.

There are cable trays in the Technical Support Center. Cables consist of power cables in flexible metallic rigid steel conduit, fiber optic cables for the multiplexed information and instrumentation cables, and a few hard-wired control cables. There is a raised computer floor to allow distribution of the few cables via conduit (flex or rigid) or cable pathways. There is a suspended ceiling but only cables associated with nonsafety-related lighting, the fire alarm system, and communication. These cables are also in conduit.

Paper within the Technical Support Center is required to be stored in approved containers (cabinets, file cabinets, waste baskets) except when in use.

A wet-pipe sprinkler system is provided throughout the Technical Support Center Complex to provide personnel protection, allow egress, and limit the spread of the fire.

Wet-pipe sprinkler systems are provided throughout each of the cable spreading rooms, to provide personnel protection, allow egress, and limit the spread of the fire.

Preaction foam sprinkler systems are provided throughout each of the diesel-generator rooms, to provide personnel protection, allow egress, and limit the spread of the fire.

Foam deluge systems are provided throughout each of the day tank rooms, to provide property protection and limit the spread of the fire.

Manual water spray systems are provided internal to each of the charcoal filters, to provide property protection and limit the spread of the fire.

To prevent damage from inadvertent or careless operation, as well as rupture of the fire suppression system, the following design features are included:

- Use of preaction type sprinkler systems, supervised with pressurized air and requiring multiple indications of fire prior to discharging water from sprinkler heads, over redundant or critical plant equipment such as diesel generators;
- Location of the manual suppression systems within stairwells and outside of rooms containing electrical components to avoid spray water damage to electrical components;
- Provision of adequately sized floor drains, curbs, equipment bases, and flood containment boundaries to handle the suppression flow;
- Installation of electrical equipment above expected flood level heights;
- Provisions for curbs around open hatches.

Post-fire recovery for a design basis fire contained to a single Electrical Building fire area would involve all the components (restoration and replenishment of fire protection equipment, forensic investigation, overhaul and salvage, demolition, reconstruction to original design, and testing of restored systems to original requirements) typical of a major industrial fire, as well as the additional security access and quality assurance controls unique to a nuclear plant. However, the resources needed to perform this restoration should be no more than that required for a major plant refueling outage. Redundancy provided in nonsafety-related systems allows quicker restoration of plant operation, even if at a reduced power level. The inclusion of equipment access paths and hatches for all areas of the Electrical Building not only facilitates original plant construction but also major equipment replacement. Due to these factors, the potential for post-fire recovery for a design basis fire contained to a single Electrical Building fire area is considered better than currently operating nuclear plants.

The following features minimize or mitigate the effect of naturally occurring hazards on fire protection within the Electrical Building:

- Fire barriers are an integral part of the Electrical Building, designed and installed as required by the IBC for applicable seismic, wind, hydrodynamic, etc, conditions;
- Fire suppression system piping in the Electrical Building is designed and installed to meet NFPA 13 seismic requirements;
- Protection of the fire protection system in the Electrical Building from design-basis storms, tornados, and floods is provided by the Electrical Building structure itself.

9A.4.7 Yard

The Yard includes all portions of the plant site external to buildings. Only those portions of the Yard containing equipment associated with Turbine and Electrical Buildings are included at this time; the COL applicant shall include fire zone drawings for those portions of the Yard except for that associated with Turbine and Electrical Building equipment.

This FHA includes a simple evaluation of the Pump House, Guard House, Hot Machine Shop, Service Water/Water Treatment Building, Cold Machine Shop, Warehouse, Training Center, Service Building, Auxiliary Boiler Building, and Administration Building. A more detailed

26A6642BB Rev. 01

evaluation of the Service Water/Water Treatment Building and Service Building will be added during the Combined Construction and Operating License (COL) application for a specific site. A more detailed evaluation of the other buildings will be added as needed during detailed design for each building.

As shown on Turbine Building and Electrical Building fire zone drawings (Figures 9A.2-12 and 9A.2-25) as well as Site fire zone drawing (Figure 9A.2-33), the significant outdoor fire hazards shall separated by 3-hour fire-rated concrete barriers to inhibit fire spread and to limit fire damage to not more than one redundant train of nonsafety-related equipment. The Yard shall not contain any safety-related or safe shutdown components, and as such, a fire in the Yard shall not affect any of the four divisions used to bring the reactor to hot standby and then cold shutdown conditions.

Foam deluge systems shall be provided on each fuel oil storage tank and the lube oil storage area, to provide property protection and limit the spread of fire.

Automatic deluge systems shall be provided on each Main, Unit Auxiliary, and Reserve Auxiliary transformer, to provide property protection and limit the spread of fire.

Wet-pipe sprinkler systems shall be provided throughout each of the cable tunnels, the diesel firepump room, and the Administration Building, to provide personnel and property protection, allow egress, and limit the spread of the fire.

A dry-pipe sprinkler system shall be provided throughout the Warehouse, to provide personnel and property protection, allow egress, and limit the spread of the fire.

A preaction sprinkler system shall be provided throughout the Training Center, to provide personnel and property protection, allow egress, and limit the spread of the fire.

To prevent damage from inadvertent or careless operation, as well as rupture of the fire suppression system, the following design features shall be included:

- Use of preaction type sprinkler systems, supervised with pressurized air and requiring multiple indications of fire prior to discharging water from sprinkler heads, over redundant or critical plant equipment such as computer simulators;
- Provision of adequately sized flood containment boundaries to handle the suppression flow and prevent groundwater contamination;
- Installation of electrical equipment above expected flood level heights.

Post-fire recovery for a design basis fire contained to a single Yard fire area would involve all the components (restoration and replenishment of fire protection equipment, forensic investigation, overhaul and salvage, demolition, reconstruction to original design, and testing of restored systems to original requirements) typical of a major industrial fire, as well as the additional security access and quality assurance controls unique to a nuclear plant. However, the resources needed to perform this restoration should be no more than that required for a major plant refueling outage. Redundancy provided in nonsafety-related systems allows quicker restoration of plant operation, even if at a reduced power level. The outdoor nature of equipment in the Yard facilitates not only original plant construction but also major equipment replacement. Due to these factors, the potential for post-fire recovery for a design basis fire contained to a single Yard fire area is considered better than currently operating nuclear plants.

The following features minimize or mitigate the effect of naturally occurring hazards on fire protection for the Yard:

- Fire barriers shall be an integral part of the buildings, designed and installed as required by the IBC for applicable seismic, wind, hydrodynamic, etc, conditions;
- Outdoor fire barriers shall be designed and installed as required by the IBC for applicable seismic, wind, hydrodynamic, etc, conditions;
- Fire suppression system piping in the buildings and in the Yard shall be designed and installed to meet NFPA 13 seismic requirements;
- Protection of the fire protection system in the buildings from design-basis storms, tornados, and floods shall be provided by the building structure itself.
- Outdoor electrical components in the fire protection system shall be weatherproof or protected against moisture intrusion;
- Dry-pipe systems shall be used for all outdoor fire protection piping;
- Outdoor piping, conduit, and components in the fire protection system shall have the required corrosion protection coatings;
- All outdoor fire protection piping and conduit shall be electrically grounded.

9A.4.8 Service Building

The Service Building shall not contain any system or function that could affect the operation or shutdown of the reactor, nor shall it contain any significant hazards. The Service Building does not contain any safety-related or safe shutdown components, and as such, a fire in the Service Building shall not affect any of the four divisions used to bring the reactor to hot standby and then cold shutdown conditions. The COL applicant shall design the Service Building fire protection features.

The basic fire protection features are presented in a method similar to that used for other buildings.

The Service Building shall be a completely separate non-seismic structure. It shall have controlled access tunnels to the Reactor Building, the Turbine Building, the Radwaste Building, and the Electrical Building. The exterior wall facing these buildings shall be a 3-hour barrier constructed of fire-resistive concrete. The controlled access doors in this wall shall be rated 3-hour fire resistive, Class A doors. Other exterior walls shall be constructed of concrete, or of gypsum board mounted on metal studs. The stairwells shall be required for personnel access and egress in the event of a fire and shall be protected with minimum 2-hour barriers in accordance with the Life Safety Code, NFPA 101.

Due to possible variations of the fire loading during operation, the facility shall be fully equipped with an automatic wet-pipe sprinkler system combined with standpipes, hose systems and portable extinguishers throughout its interior. The wet-pipe sprinkler system shall be designed for Light Hazard Occupancy, 4.2 L/min/m^2 (0.10 gpm/ft²).

Fire detection shall be provided throughout the Service Building with the use of Class A supervised product-of-combustion detection systems. Alarms, both trouble and fire, shall report

9A.4-11

to the Main Control Room. Fire alarms shall be sounded throughout the Service Building. Manual fire alarm pull boxes shall be located at each fire hose and at extinguisher stations.

ABC dry chemical portable fire extinguishers shall be provided on each floor of the facility, located at or near the hose stations and alarm pull boxes. Additional portable fire extinguishers shall be provided in various locations for convenience, or where increased human activity is anticipated.

Wall, floor, and ceiling penetrations for piping, HVAC, and cable trays shall be sealed where needed for HVAC control. However, fire dampers or stops shall be provided only where required for personnel protection, as the nature of the activities within the building, coupled with the complete sprinkler coverage, precludes the need to provide multiple fire areas within the Service Building.

To prevent damage from inadvertent or careless operation, as well as rupture of the fire suppression system, the following design features shall be included:

- Location of the manual suppression systems within stairwells and outside of rooms containing electrical components to avoid spray water damage to electrical components;
- Provision of adequately sized floor drains, curbs, equipment bases, and flood containment boundaries to handle the suppression flow;
- Installation of electrical equipment above expected flood level heights;
- Provisions for curbs around open hatches.

The following features minimize or mitigate the effect of naturally occurring hazards on fire protection within the Service Building:

- Fire barriers are an integral part of the Service Building, designed and installed as required by the IBC for applicable seismic, wind, hydrodynamic, etc, conditions;
- Fire suppression system piping in the Service Building is designed and installed to meet NFPA 13 seismic requirements;
- Protection of the fire protection system in the Service Building from design-basis storms, tornados, and floods is provided by the Service Building structure itself.

9A.4.9 Service Water/Water Treatment Building

The Service Water/Water Treatment Building (SF/WT) does not contain any system or function that could affect the operation or shutdown of the reactor, nor does it contain any significant hazards. The SF/WT does not contain any safety-related or safe shutdown components, and as such, a fire in the SF/WT does not affect any of the four divisions used to bring the reactor to hot standby and then cold shutdown conditions. The COL applicant shall design the SF/WT fire protection features. The basic fire protection features are presented in a method similar to that used for other buildings.

The SF/WT is a non-seismic structure, and may be attached to the Cooling Towers. None of the walls or floors are fire-rated. Stairwells shall be required for personnel access and egress in the event of a fire and therefore are protected with minimum 2-hour barriers in accordance with the Life Safety Code, NFPA 101.

A wet-pipe sprinkler system shall be provided throughout the diesel firepump room, to provide personnel and property protection, allow egress, and limit the spread of the fire.

Fire detection shall be provided throughout the SF/WT with the use of Class A supervised product-of-combustion detection systems. Alarms, both trouble and fire, shall report to the Main Control Room.

ABC dry chemical portable fire extinguishers shall be provided on each floor of the facility, located at or near the hose stations and alarm pull boxes. Additional portable fire extinguishers shall be provided in various locations for convenience, or where increased human activity is anticipated.

To prevent damage from inadvertent or careless operation, as well as rupture of the fire suppression system, the following design features shall be included:

- Location of the manual suppression systems within stairwells and outside of rooms containing electrical components to avoid spray water damage to electrical components;
- Provision of adequately sized floor drains, curbs, equipment bases, and flood containment boundaries to handle the suppression flow;
- Provisions for curbs around open hatches.

9A.5 FIRE PROTECTION ANALYSES BY ROOM OR FIRE ZONE

Cumulative damage (property loss) and restoration from fire initiation and suppression activities, but excluding replacement power costs, is subjectively categorized as follows:

- Negligible: Less than \$5000
- Minor: Less than \$50,000
- Moderate: Less than \$2,000,000 (typical insurance deductible)
- Significant: Greater than \$2,000,000

Cumulative plant operational effects from fire initiation and suppression activities are categorized as follows:

- None: No effect to any power production or plant equipment
- Power Reduction: Event could require or cause reduction in turbine output, due to reduced steam flow rate resulting from loss of some equipment
- Turbine Trip: Event could require or cause stopping turbine
- LOPP: Event could require or cause loss of all on-site power sources

Reactor Scram: Event could require or cause operators to scram the reactor, achieve hot standby condition, and continue to cold shutdown condition if necessary



9A.5.1 Reactor Building

See Table 9A.5-1 for detailed fire hazards analysis of each fire area within the Reactor Building. See Figures 9A.2-1 through 9A.2-11 for Reactor Building fire zone drawings.

9A.5.2 Fuel Building

See Table 9A.5-2 for detailed fire hazards analysis of each fire area within the Fuel Building. See Figures 9A.2-1 through 9A.2-8 and Figure 9A.2-10 for Fuel Building fire zone drawings.

9A.5.3 Control Building

See Table 9A.5-3 for detailed fire hazards analysis of each fire area within the Control Building. See Figures 9A.2-2 through 9A.2-5 and Figure 9A.2-11 for Control Building fire zone drawings.

9A.5.4 Turbine Building

See Table 9A.5-4 for detailed fire hazards analysis of each fire area within the Turbine Building. See Figures 9A.2-12 through 9A.2-19 for Turbine Building fire drawings

9A.5.5 Radwaste Building

See Table 9A.5-5 for detailed fire hazards analysis of each fire area within the Radwaste Building.

See Figures 9A.2-20 through 9A.2-24 for Radwaste Building fire drawings.

9A.5.6 Electrical Building

See Table 9A.5-6 for detailed fire hazards analysis of each fire area within the Electrical Building.

See Figures 9A.2-25 through 9A.2-32 for Electrical Building fire drawings.

9A.5.7 Yard

See Table 9A.5-7 for detailed fire hazards analysis of each fire area for portions of the Yard. The remainder of the Yard is site specific and is designed by the COL applicant. The applicant will provide additional information with the application for COL.

See Figures 9A.2-12, 9A.2-25, and 9A.2-33 for fire drawings for portions of the Yard.

9A.5.8 Service Building

The Service Building is protected in accordance with applicable NFPA codes. A detailed, roomby-room fire protection analysis is not required because this building does not contain any system or function that could affect the safe shutdown of the reactor.

9A.5.9 Service Water/Water Treatment Building

The SF/WT is a site-specific structure and is designed by the COL applicant; the applicant will provide additional information with the application for COL.

Table 9A.5-1, Reactor Building

	Fire Area:	F1104	Description:	Elevator A				
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; I	NFPA 10, 14, 72, 101, 804; ASME A	17.1		
		DCD Fig:		Bu	ilding code occupancy classification:	F-1		
		9A.2-1			Electrical classification:	none		
		9A.2-2	Safety-related divisional equipment or cables: none					
		9A.2-3	Nonsafety-related redundant trains or equipment or cables: none					
		9A.2-4	Surround	Surrounded by fire barriers rated at: 3 hours				
		9A.2-5		Except	: basemat (non-rated); elevator do	ors (1.5 hr rated)		
		9A.2-6						
Consisting of the following Rooms:		Fire De	tection	Fire Suppression				
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-11500	1104	Class IIIB lubricants Cable insulation Electrical equipment	Area-wide ionization	Manual pulls (outside Elev at each landing)	CO2 fire extinguisher (outside room)	Hose racks (in nearby stairwell)		
	1291	Class IIIB lubricants Cable insulation			ABC fire extinguishers (outside Elev at each landing)			
		< 700 700	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:		
Assuming o	operation of in	stalled fire extinguishing eq	uipment, impact of fire upor	n:	Complete burnout of all equipme this Fire Area affects no safety-re	nt and cables within lated equipment; all		
	lant operation:	None			safety divisions and both redunda	ant trains A and B are		
Kadio	logical release:	None, no radiological ma	teriais present		operable.			
Marrie	Life safety:	I ravel distance limits to	EALLS MEET NEPA 101					
Ivianu	Droporty logg	Access via stairwells and	noistway doors					
	Property loss:	Inegligible						

	Fire Area:	F1105	Description: Elevator C					
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804; ASME A	17.1		
		DCD Fig:		Bi	uilding code occupancy classification:	F-1		
		9A.2-1		Electrical classification: none				
		9A.2-2	Safety-related divisional equipment or cables: none					
		9A.2-3	Nonsafety-related redundant trains or equipment or cables: none					
		9A.2-4	Surrounded by fire barriers rated at: 3 hours					
		9A.2-5		Excep	t: basemat (non-rated); elevator do	ors (1.5 hr rated)		
		9A.2-6						
Consisting of the following Rooms:		Fire De	tection	Fire Suppress	sion			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-11500	1105	Class IIIB lubricants Cable insulation Electrical equipment	Area-wide ionization	Manual pulls (outside Elev at each landing)	CO2 fire extinguisher (outside room)	Hose racks (in nearby stairwell)		
	1292	Class IIIB lubricants Cable insulation			ABC fire extinguishers (outside Elev at each landing)			
		< 700 700	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP of function, impact of design basis fire	equipment does not e on safe shutdown:		
Assuming operation of installed fire extinguishing eq Plant operation: None Radiological release: None, no radiological ma Life safety: Travel distance limits to Manual firefighting: Access via stairwells and Property loss: Negligible		uipment, impact of fire upon: terials present EXITs meet NFPA 101 hoistway doors		Complete burnout of all equipment and cables within this Fire Area affects no safety-related equipment; all safety divisions and both redundant trains A and B are operable.				

	Fire Area:	F1110	Description:	Description: HCU A					
	Building:	Reactor	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804					
		DCD Fig:		Bu	ilding code occupancy classification:	F-1			
		9A.2-1			Electrical classification:	none			
		9A.2-2	Safety-related divisional equipment or cables: I						
		9A.2-3	Nonsafety-related redundant trains or equipment or cables: A						
		9A.2-4	Surrounded by fire barriers rated at: 3 hours						
				Except: basemat (non-rated)					
Consisting of the following Rooms:		Fire De	etection	Fire Suppress	sion				
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup			
-11500	1110	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire			
-9100				(outside stairwell	(in nearby stairwell)	extinguishers			
-6400				at each landing)					
-1000	1312								
			-						
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not			
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:				
					Complete burnout of all equipment and cables within				
Assuming of	operation of ins	stalled fire extinguishing ec	quipment, impact of fire upo	n:	this Fire Area results in loss of on	ly redundant train A			
P	lant operation:	Reactor scram			and Division I safe shutdown equi	ipment and circuits, as			
Radiol	ogical release:	Contained within building	ng		well as loss of redundant Division	I and II HCU solenoid			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		circuits; if HCU's are unavailable	for reactor scram,			
Manu	al firefighting:	Access via stairwells			either FMCRD portion of CRD sy	ystem or SLC system			
	Property loss:	Moderate			can be used to scram reactor (con	aponents and circuits			
					for either are located outside this	Fire Area); for other			
					systems, remaining three division	s of safe shutdown and			
					redundant train B are unaffected	by fire and are			
					operable. Automatic logic contro	l scheme (any two out			
					of four redundant signals) remain	is operable.			

	Fire Area:	F1120	Description:	Description: HCU B					
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804				
		DCD Fig:	_	Bui	ilding code occupancy classification:	F-1			
		9A.2-1	1		Electrical classification:	none			
		9A.2-2	1	Safety-rel	lated divisional equipment or cables:	II			
		9A.2-3	1	Nonsafety-related redu	undant trains or equipment or cables:	B			
		9A.2-4	Surround	led by fire barriers rated at:	3 hours				
			1	Except:	basemat (non-rated)				
			1						
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup			
		J	'						
-11500	1107	Class A combustibles	Area-wide ionization	Manual pulls	Hose racks	ABC fire			
		Class IIIB lubricants	1	(outside stairwell	(in nearby stairwell)	extinguishers			
-11500	1120	Cable insulation		at each landing)					
-9100			1						
-6400			1						
-1000	1322		<u> </u>						
· · · · · · · · · · · · · · · · · · ·			<u> </u>						
		- 700	L	1) (1/ 0)		• • • • • • • • • • • • • • • • • • • •			
		< 700	Anticipated combustible lo	bad, MJ/m2	Assuming automatic & manual FP 6	equipment does not			
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:				
					Complete burnout of all equipment and cables within				
Assuming c	operation of ins	stalled fire extinguishing eq	aipment, impact of fire upo)n: 1	this Fire Area results in loss of on	ly redundant train B			
P	lant operation:	Reactor scram			and Division II safe shutdown equ	lipment and circuits, as			
Radiol	logical release:	Contained within buildin	g		well as loss of redundant Division	I and II HCU solenoid			
	Life safety:	Travel distance limits to l	EXITs meet NFPA 101		circuits; if HCU's are unavailable	for reactor scram,			
Manu	al firefighting:	Access via stairwells		1	either FMCRD portion of CRD sy	ystem or SLC system			
	Property loss:	. Moderate]	can be used to scram reactor (con	nponents and circuits			
					for either are located outside this	Fire Area); for other			
					systems, remaining three division	s of safe shutdown and			
					redundant train A are unaffected	by fire and are			
					operable. Automatic logic contro	l scheme (any two out			
					of four redundant signals) remain	1s operable.			
						_			

	Fire Area:	F1130	Description:	Description: HCU C					
	Building:	Reactor	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804					
		DCD Fig:		Bu	ilding code occupancy classification:	F-1			
		9A.2-1		Electrical classification: none					
		9A.2-2	Safety-related divisional equipment or cables: III						
		9A.2-3	Nonsafety-related redundant trains or equipment or cables: A						
		9A.2-4	Surrounded by fire barriers rated at: 3 hours						
				Except	t: basemat (non-rated)				
Consisting of the following Rooms:		Fire De	etection	Fire Suppress	sion				
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup			
-11500	1130	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire			
-9100				(outside stairwell	(in nearby stairwell)	extinguishers			
-6400				at each landing)					
-1000	1332								
			-						
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not			
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:			
					Complete burnout of all equipment and cables within				
Assuming c	operation of ins	stalled fire extinguishing ea	quipment, impact of fire upo	n:	this Fire Area results in loss of on	ly redundant train A			
P	lant operation:	Reactor scram			and Division III safe shutdown eq	uipment and circuits,			
Radiol	ogical release:	Contained within building	ng		as well as loss of redundant Divisi	ion I and II HCU			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		solenoid circuits; if HCU's are un	available for reactor			
Manua	al firefighting:	Access via stairwells			scram, either FMCRD portion of	CRD system or SLC			
	Property loss:	Moderate			system can be used to scram react	tor (components and			
					circuits for either are located outs	side this Fire Area); for			
					other systems, remaining three di	visions of safe			
					shutdown and redundant train B	are unaffected by fire			
					and are operable. Automatic logi	c control scheme (any			
					two out of four redundant signals) remains operable.			

	Fire Area:	F1140	Description:	Description: HCU D					
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804				
		DCD Fig:		Bu	ilding code occupancy classification:	F-1			
		9A.2-1			Electrical classification:	none			
		9A.2-2	Safety-related divisional equipment or cables: IV						
		9A.2-3	Nonsafety-related redundant trains or equipment or cables: B						
		9A.2-4	Surrounded by fire barriers rated at: 3 hours						
				Except	t: basemat (non-rated)				
Consisting of the following Rooms:			Fire De	etection	Fire Suppress	sion			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup			
-11500	1140	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire			
-9100				(outside stairwell	(in nearby stairwell)	extinguishers			
-6400				at each landing)	``````````````````````````````````````	U			
-1000	1342			0,					
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not			
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:				
					Complete burnout of all equipme	nt and cables within			
Assuming c	peration of ins	stalled fire extinguishing ec	quipment, impact of fire upo	n:	this Fire Area results in loss of on	ly redundant train B			
P	lant operation:	Reactor scram			and Division IV safe shutdown eq	uipment and circuits, as			
Radiol	ogical release:	Contained within building	ng		well as loss of redundant Division	I and II HCU solenoid			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		circuits; if HCU's are unavailable	for reactor scram,			
Manua	al firefighting:	Access via stairwells			either FMCRD portion of CRD sy	ystem or SLC system			
	Property loss:	Moderate			can be used to scram reactor (con	aponents and circuits			
					for either are located outside this	Fire Area); for other			
					systems, remaining three division	s of safe shutdown and			
					redundant train A are unaffected	by fire and are			
					operable. Automatic logic contro	l scheme (any two out			
					of four redundant signals) remain	is operable.			
						•			

	Fire Area:	F1150	Description: Nonsafety NE quadrant					
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 90A, 101, 804			
	DCD Fig:			Bui	lding code occupancy classification:	F-1		
	9A.2-1	9A.2-6]		Electrical classification:	none		
	9A.2-2	9A.2-7		Safety-rel	ated divisional equipment or cables:	Ι		
	9A.2-3	9A.2-8		Nonsafety-related redu	indant trains or equipment or cables:	Α		
	9A.2-4	9A.2-9	Surround	ed by fire barriers rated at:	3 hours			
	9A.2-5			Except:	basemat (non-rated); elevator do	oors (1.5 hr rated)		
			•	^	· · · · · · · · · · · · · · · · · · ·	<i>(</i>		
Consisting of	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-11500	1100	Electrical equipment	Area-wide ionization	Manual pulls	Hose racks	CO2 fire extinguishers,		
		Class IIIB lubricants		(outside stairwell	(in nearby stairwells)	ABC fire extinguishers		
	1	Cable insulation		at each landing)	× • ·	Ŭ		
	1150, 1151	Class IIIB lubricants	1			ABC fire extinguishers		
-6400	1250, 1293	Cable insulation				5		
-1000	1300, 1304							
4650	1400	Cable insulation	1					
	below floor							
5050	1400	Cable insulation	1		CO2 fire extinguishers	Hose racks		
9060	1500	Electrical equipment			5	(in nearby stairwells)		
			1					
· · · · · ·		4	<u>.</u>					
< 700 EL 4	4650 & below;	< 1400 EL 5050 & above	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
700 EL 4	650 & below;	1400 EL 5050 & above	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
	<u>, </u>		1	.,	Complete burnout of all equipme	ent and cables within		
Assuming c	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upor	n:	this Fire Area results in loss of on	lv Division I shutdown		
P	lant operation:	Reactor scram			equipment and circuits, as well as	s loss of redundant train		
Radiol	logical release:	Contained within buildir	ıg		A: remaining three divisions of s	afe shutdown and		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		redundant train B are unaffected	by fire and are		
Manu	al firefighting:	Access via stairwells			operable. Automatic logic contro	l scheme (any two out		
	Property loss:	Moderate			of four redundant signals) remain	ns operable. Both A and		
	1. P.				R nonsafety-related on-site power	r sources are unaffected		
					by fire and are operable	sources are analiered		
					by fire and are operable.			

	Fire Area:	F1152	Description:	Nonsafety SE quadrant		
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 90A, 101, 804	
	DCD Fig:			Bui	lding code occupancy classification:	F-1
	9A.2-1	9A.2-6			Electrical classification:	none
	9A.2-2	9A.2-7		Safety-rel	lated divisional equipment or cables:	III
	9A.2-3	9A.2-8		Nonsafety-related redu	indant trains or equipment or cables:	Α
	9A.2-4	9A.2-9	Surround	ed by fire barriers rated at:	3 hours	
	9A.2-5			Except:	basemat (non-rated); elevator do	ors (1.5 hr rated)
Consisting	of the followin	ig Rooms:	Fire De	tection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-11500	1101, 1106	Class IIIB lubricants	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers
	1152	Cable insulation		(outside stairwell	(in nearby stairwells)	_
	1153		Area-wide photoelectric	at each landing)		
-6400	1204, 1294		Area-wide ionization			
	1251, 1252					
-1000	1301, 1306					
4650	1401	Cable insulation				
	below floor					
5050	1401	Cable insulation			CO2 fire extinguishers	Hose racks
9060	1501	Electrical equipment				(in nearby stairwells)
			_			
< 700 EL 4	4650 & below;	< 1400 EL 5050 & above	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not
700 EL 4	650 & below;	1400 EL 5050 & above	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:
					Complete burnout of all equipme	nt and cables within
Assuming	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upor	n:	this Fire Area results in loss of on	ly Division III
Р	lant operation:	Reactor scram			shutdown equipment and circuits	, as well as loss of
Radio	logical release:	Contained within building	ıg		redundant train A; remaining th	ree divisions of safe
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		shutdown and redundant train B	are unaffected by fire
Manu	al firefighting:	Access via stairwells			and are operable. Automatic logi	ic control scheme (any
	Property loss:	Moderate			two out of four redundant signals) remains operable.
					Both A and B nonsafety-related o	n-site power sources
					are unaffected by fire and are ope	erable.

	Fire Area:	F1160	Description:	Description Nonsafety NW quadrant				
	Building:	Reactor	Applicable codes:	IBC: Reg Guide 1.189; N	NFPA 10. 14, 72, 90A, 101, 804			
	DCD Fig:		- rr	Bui	ilding code occupancy classification:	F-1		
	9A.2-1	9A.2-6]		Electrical classification:	none		
	9A.2-2	9A.2-7		Safety-re	lated divisional equipment or cables:	IV		
	9A.2-3	9A.2-8		Nonsafety-related redu	undant trains or equipment or cables:	B		
	9A.2-4	9A.2-9	Surround	led by fire barriers rated at:	3 hours	!		
	9A.2-5			Except:	basemat (non-rated)			
l					<u>_</u>			
Consisting	Consisting of the following Rooms:		Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-11500	1103	Electrical equipment	Area-wide ionization	Manual pulls	Hose racks	CO2 fire extinguishers,		
		Class IIIB lubricants		(outside stairwell	(in nearby stairwells)	ABC fire extinguishers		
		Cable insulation		at each landing)		_		
	1160, 1161	Class IIIB lubricants				ABC fire extinguishers		
-6400	1260	Cable insulation						
	1296							
-1000	1303, 1305							
4650	1403	Cable insulation						
	below floor							
5050	1403	Cable insulation			CO2 fire extinguishers	Hose racks		
9060	1503	Electrical equipment				(in nearby stairwells)		
< 700 EL 4	4650 & below;	; < 1400 EL 5050 & above	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not		
700 EL 4	4650 & below;	; 1400 EL 5050 & above	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
			-		Complete burnout of all equipme	nt and cables within this		
Assuming	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upo	n:	Fire Area results in loss of only D	ivision IV shutdown		
Р	'lant operation:	Reactor scram			equipment and circuits, as well as	s loss of redundant train		
Radio	logical release:	Contained within buildin	g		B; remaining three divisions of sa	afe shutdown and		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		redundant train A are unaffected	by fire and are		
Manu	al firefighting:	Access via stairwells			operable. Automatic logic contro	l scheme (any two out of		
	Property loss:	Moderate			four redundant signals) remains o	operable. Both A and B		
					nonsafety-related on-site power s	ources are unaffected		
					by fire and are operable.			
					й ж.			

Building: ReactorDCD Fig:9A.2-19A.2-69A.2-29A.2-79A.2-39A.2-89A.2-49A.2-99A.2-59A.2-99A.2-5Surrounded by fire barriers rated at: BackupFire DetectionFire DetectionFire SuppressionFire DetectionFire SuppressionConsisting of the following Rooms:Fire DetectionELRoom #Potential CombustiblesPrimaryBackupPrimaryBackupPrimaryBackupConsisting of the following Rooms:Area-wide ionizationELRoom #Potential CombustiblesPrimaryBackupPrimaryBackupPrimaryBackupConsisting of the following Rooms:Area-wide ionizationELRoom #Potential CombustiblesPrimaryBackupPrimaryBackupColse InsulationArea-wide ionizationAfrea-wide ionizationManual pulls (outside stairwell at each landing)Gable insulationArea-wide ionizationGable insulationArea-wide ionizationGable insulationArea-wide ionizationColse insulationArea-wide ionizationGable insulationArea-wide ionizationGable insulationColse insulationGable insulationArea-wide ionizationGable insulationHose racks (in nearby st		Fire Area:	. F1162	Description:	Nonsafety SW quadrant			
DCD Fig:Building code occupancy classification:F-19A.2-19A.2-6Safety-related divisional equipment or cables:II9A.2-29A.2-7Safety-related divisional equipment or cables:II9A.2-39A.2-8Surrounded by fire barriers rated at:3 hours9A.2-49A.2-9Surrounded by fire barriers rated at:3 hours9A.2-5Fire DetectionFire SuppressionExcept:basemat (non-rated); elevator doors (1.5 hr rated)ELRoom #Potential CombustiblesPinaryBackupPrimaryBackupPrimaryBackup-115001102Class IIIB lubricants1162Cable insulationArea-wide ionization46501402Cable insulationbelow floorArea-wide ionization50501402Cable insulation50501402Cable insulation	1	Building:	. Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 90A, 101, 804		
9A.2-19A.2-6Backup9A.2-29A.2-79A.2-79A.2-39A.2-89A.2-49A.2-99A.2-59A.2-99A.2-5Surrounded by fire barriers rated at: Backup2Basemat (non-rated); elevator doors (1.5 hr rated)ELRoom # Potential CombustiblesELRoom # Potential Combustibles-115001102 1162Class IIIB lubricants 1163Area-wide ionization Area-wide ionization-64001295-6400<	<u>Г</u>	JCD Fig:		_	Bui	ilding code occupancy classification:	F-1	
9A.2-2 9A.2-7 Safety-related divisional equipment or cables: II 9A.2-3 9A.2-8 Nonsafety-related redundant trains or equipment or cables: B 9A.2-4 9A.2-9 Surrounded by fire barriers rated at: 3 hours 9A.2-5 Except: basemat (non-rated); elevator doors (1.5 hr rated) Consisting of the following Rooms: EL Room # Potential Combustibles Primary Backup -11500 1102 Class IIIB lubricants Area-wide ionization Manual pulls Hose racks -1160 1162 Cable insulation Area-wide ionization Manual pulls (in nearby stairwells) ABC fire extinguisher -6400 1295 Area-wide ionization Area-wide ionization CO2 fire extinguishers Hose racks 5050 1402 Cable insulation Cable insulation Insulation Insulation Insulation Insulation 5050 1402 Floretrical acuipment Cable insulation Insulation Insulation Insulation Insulation 5060 1402 Floretrical acuipment Insulation Insuretical acuipment Insulation </td <td>i </td> <td>9A.2-1</td> <td>9A.2-6</td> <td></td> <td></td> <td>Electrical classification:</td> <td>none</td>	i	9A.2-1	9A.2-6			Electrical classification:	none	
9A.2-3 9A.2-8 Nonsafety-related redundant trains or equipment or cables: B 9A.2-4 9A.2-9 Surrounded by fire barriers rated at: Except: 3 hours 9A.2-5 Description Fire Detection Fire Suppression Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup Primary Backup -11500 1102 Class IIIB lubricants Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguisher -6400 1295 Area-wide ionization Manual pulls (outside stairwell at each landing) CO2 fire extinguishers Hose racks (in nearby stairwells) 5050 1402 Cable insulation Flore tripe a equipment Hose racks (in nearby stairwells) Hose racks (in nearby stairwells)	i (9A.2-2	9A.2-7		Safety-rel	lated divisional equipment or cables:	II	
9A.2-4 9A.2-9 Surrounded by fire barriers rated at: Except: 3 hours Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup -11500 1102 Class IIIB lubricants Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks (in nearby stairwells) ABC fire extinguisher -6400 1295 Area-wide ionization Marea-wide ionization Coll at each landing) CO2 fire extinguishers Hose racks (in nearby stairwells) 5050 1402 Cable insulation Floetrical augiment Hose racks (in nearby stairwells) Hose racks (in nearby stairwells)	i	9A.2-3	9A.2-8		Nonsafety-related redu	undant trains or equipment or cables:	В	
9A.2-5 Except: basemat (non-rated); elevator doors (1.5 hr rated) Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup -11500 1102 Class IIIB lubricants Area-wide ionization Manual pulls Hose racks ABC fire extinguisher -11500 1162 Cable insulation Area-wide photoelectric at each landing) (in nearby stairwells) ABC fire extinguisher -6400 1295 Area-wide ionization Area-wide ionization Could be insulation Area-wide ionization Area-wide ionization (in nearby stairwells) (in nearby stairwells) 4650 1402 Cable insulation Area-wide ionization CO2 fire extinguishers Hose racks 9060 1502 Electrical aquinyment Electrical aquinyment Gauge particula in the insulation Gauge particula in the insulation	1	9A.2-4	9A.2-9	Surround	ed by fire barriers rated at:	3 hours		
Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup Primary Backup -11500 1102 Class IIIB lubricants Area-wide ionization Manual pulls Hose racks ABC fire extinguisher -11500 1162 Cable insulation Area-wide photoelectric at each landing) (in nearby stairwells) ABC fire extinguisher -6400 1295 Area-wide ionization Area-wide ionization Manual pulls (in nearby stairwells) ABC fire extinguisher -6400 1295 Area-wide ionization Area-wide ionization Manual pulls (in nearby stairwells) ABC fire extinguisher -6400 1295 Area-wide ionization Colle ionization Area-wide ionization Area-wide ionization Area-wide ionization Area-wide ionization (in nearby stairwells) below floor Electrical acuinment Flootrical acuinment Flootrical acuinment Insertical acuinment Insertical acuinment	L L	9A.2-5			Except:	basemat (non-rated); elevator do	ors (1.5 hr rated)	
Consisting of the following Rooms: Fire Detection Fire Detection EL Room # Potential Combustibles Primary Backup Primary Backup -11500 1102 Class IIIB lubricants Area-wide ionization Manual pulls Hose racks ABC fire extinguisher -1163 -6400 1295 Area-wide photoelectric Area-wide ionization Manual pulls (outside stairwell at each landing) ABC fire extinguisher -6400 1295 Area-wide ionization Area-wide ionization Area-wide ionization Manual pulls (outside stairwell at each landing) ABC fire extinguisher -6400 1295 Area-wide ionization Area-wide ionization Area-wide ionization CO2 fire extinguishers Hose racks 5050 1402 Cable insulation Electrical equipment Electrical equipment Hose racks (in nearby stairwells)				1			-	
ELRoom #Potential CombustiblesPrimaryBackupPrimaryBackup	Consisting of	Consisting of the following Rooms:		Fire De	tection	Fire Suppress	sion	
-115001102Class IIIB lubricants Cable insulationArea-wide ionizationManual pulls (outside stairwell at each landing)Hose racks (in nearby stairwells)ABC fire extinguisher-64001295Area-wide photoelectric Area-wide ionizationArea-wide ionizationManual pulls (outside stairwell at each landing)Hose racks (in nearby stairwells)ABC fire extinguisher-64001295Area-wide ionizationArea-wide ionizationArea-wide ionizationArea-wide ionization46501402 below floorCable insulationArea-wide ionizationArea-wide ionizationArea-wide ionization50501402Cable insulationFloetrical equipmentHose racks (in nearby stairwells)Hose racks (in nearby stairwells)	EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-11500 1102 Class IIIB lubricants Area-wide ionization Manual pulls Hose racks ABC fire extinguisher 1162 Cable insulation Area-wide photoelectric at each landing) (in nearby stairwells) ABC fire extinguisher -6400 1295 Area-wide ionization Area-wide ionization Area-wide ionization Area-wide ionization 4650 1402 Cable insulation Area-wide ionization Area-wide ionization Area-wide ionization 5050 1402 Cable insulation Hose racks CO2 fire extinguishers Hose racks 9060 1502 Electrical equipment Electrical equipment Gauge racks (in nearby stairwells)	┫━━━━┿				 			
1162 Cable insulation (outside stairwell at each landing) -6400 1295 -6400 1295 4650 1402 below floor 5050 1402 Cable insulation 9060 1502 Electrical equipment	-11500	1102	Class IIIB lubricants	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
1163 Area-wide photoelectric at each landing) -6400 1295 Area-wide ionization 4650 1402 Cable insulation below floor Area-wide ionization 5050 1402 Cable insulation Area-wide ionization 0060 1502 Flactrical equipment Co2 fire extinguishers	Ⅰ ⊢	1162	Cable insulation		(outside stairwell	(in nearby stairwells)		
-6400 1295 Area-wide ionization 4650 1402 Cable insulation below floor Coble insulation 5050 1402 Cable insulation 0060 1502 Electrical equipment		1163	4	Area-wide photoelectric	at each landing)			
4650 1402 Cable insulation below floor	-6400	1295	<u> </u>	Area-wide ionization	1			
below floor Collision 5050 1402 Cable insulation 0060 1502 Flactrical equipment	4650	1402	Cable insulation		1			
50501402Cable insulationCO2 fire extinguishersHose racks00601502Electrical equipment(in nearby stairwells)	L'	below floor	<u> </u>		1			
0060 1507 Flactrical aguinment (in nearby stairwells)	5050	1402	Cable insulation		1	CO2 fire extinguishers	Hose racks	
	9060	1502	Electrical equipment		 	_	(in nearby stairwells)	
			<u> </u>		<u> </u>			
				Π	1) <i>(11)</i> 0		· · · ·	
< 700 EL 4650 & below; < 1400 EL 5050 & above Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not	< 700 EL 46	<u>50 & below;</u>	<u>, < 1400 EL 5050 & above</u>	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP of	ning automatic & manual FP equipment does not	
700 EL 4650 & below; 1400 EL 5050 & above Unsprinklered combustible load limit, MJ/m2 function, impact of design basis fire on safe shutdown:	700 EL 46	50 & below;	, 1400 EL 5050 & above	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	on safe shutdown:	
Complete burnout of all equipment and cables within	I			· · · · · · · · · · · · · · · · · · ·		Complete burnout of all equipme	nt and cables within	
Assuming operation of installed fire extinguishing equipment, impact of fire upon:	Assuming op	peration of ins	stalled fire extinguisning eq	juipment, impact of fire upor	n: I	this Fire Area results in loss of on	ly Division II shutdown	
Plant operation: Reactor scram equipment and circuits, as well as loss of redundant trained and the second	Pia	int operation:	Reactor scram		1	equipment and circuits, as well as	loss of redundant train	
Radiological release: Contained within building B; remaining three divisions of safe shutdown and	Radiolog	gical release:	Contained within building	lg	1	B; remaining three divisions of sa	afe shutdown and	
Life safety: Travel distance limits to EXITs meet NFPA 101 redundant train A are unaffected by fire and are		Lite satety:	Travel distance limits to	EXITs meet NFPA 101	1	redundant train A are unaffected	by fire and are	
Manual firefighting: Access via stairwells operable. Automatic logic control scheme (any two out	Manual	i firefighting:	Access via stairwells		1	operable. Automatic logic contro	l scheme (any two out	
Property loss: Moderate of four redundant signals) remains operable. Both A an	P	Property loss:	, Moderate		I	of four redundant signals) remain	is operable. Both A and	
B nonsafety-related on-site power sources are unaffected						B nonsafety-related on-site power	sources are unaffected	
by fire and are operable.						by fire and are operable.		

	Fire Area:	F1170	Description: Drywell and Containment				
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; NI	FPA 10, 14, 72, 101, 804		
	DCD Fig:			Bui	ilding code occupancy classification:	F-1	
	9A.2-1	9A.2-6			Electrical classification:	none	
	9A.2-2	9A.2-7		Safety-re	lated divisional equipment or cables:	I, II, III, IV	
	9A.2-3	9A.2-8		Nonsafety-related redu	undant trains or equipment or cables:	A, B	
	9A.2-4	9A.2-9	Surrour	nded by fire barriers rated at:	3 hours		
	9A.2-5			Except	basemat (non-rated), including ba	saltic concrete	
			_				
Consisting of the following Rooms:		ns:	Fire Det	ection	Fire Suppression		
EL	Room #	Potential Combustibl	Primary	Backup	Primary	Backup	
-8800	1170	Class IIIB	None	Portable fire	Inerted environment during	Hose racks and	
-6400	1206	lubricants		detection used	power operation	ABC fire	
4650	14P0	Cable insulation		as needed	· ·	extinguishers	
9060	1570	Filter media		during outage		(via hatches at EL	
17500	17P0, 17P1, 17P2	None		activities		-6400, EL 13570,	
27000	18P3A, 18P3B,					EL 17500, and EL	
	18P4A, 18P4B,					34000)	
	18P4C, 18P5A,					,	
	18P5B, 18P5C						
	18P3C, 18P3D,						
	18P4D, 18P4E,						
	18P4F, 18P6A,						
	18P6B, 18P6C						
		< 700	Anticipated combustible load,	MJ/m2	Assuming automatic & manual FP e	equipment does not	
		700	Unsprinklered combustible loa	d limit, MJ/m2	function, impact of design basis fire	on safe shutdown:	
					During plant operation, this entire Fire Area is inerted		
Assuming of	operation of installed	fire extinguishing equ	ipment, impact of fire upon:		by nitrogen and will not support of	combustion. When not	
	Plant operation:	Reactor scram; out	age required to restore		inerted (during shutdowns and ou	itages), complete	
	Radiological release:	Contained within co	ontainment structure		burnout of all equipment and cab	les within this Fire	
	Life safety:	Travel distance limi	its to EXITs meet NFPA 101		Area is prevented by limited amo	unt of combustibles	
	Manual firefighting:	Access via hatches			and spatial separation between re	dundant divisional	
	Property loss:	Significant			circuits to ensure that no more that two divisions of safe		
					shutdown equipment will be affec	ted by a single fire.	
					See also section 9A.6.		

	Fire Area:	F1190	Description:	Description: Stairwells A and E				
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804			
	DCD Fig:			Building code occupancy classification: F-1				
	9A.2-1	9A.2-6			Electrical classification:	none		
	9A.2-2	9A.2-7		Safety-rel	lated divisional equipment or cables:	none		
	9A.2-3	9A.2-8		Nonsafety-related redu	indant trains or equipment or cables:	none		
	9A.2-4	9A.2-9	Surround	ed by fire barriers rated at:	3 hours			
	9A.2-5			Except: basemat (non-rated)				
			-					
Consisting of the following Rooms:		Fire De	etection	Fire Suppres	sion			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-11500	1190	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers		
-6400				(outside stairwell				
-1000				at each landing)				
4650								
9060								
13570	1690							
17500								
27000								
34000								
			7					
		negligible	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
					Complete burnout of all equipme	ent and cables within		
Assuming of	operation of ins	stalled fire extinguishing eq	juipment, impact of fire upo	n:	this Fire Area affects no safety-re	elated equipment; all		
P	lant operation:	None			safety divisions and both redunda	ant trains A and B are		
Radiol	ogical release:	None, no radiological ma	aterials present		operable.			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101					
Manu	al firefighting:	Access via exterior and in	nterior doors					
	Property loss:	Negligible						

Fire Area: F1191		Description:	Description: Stairwell B				
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804		
	DCD Fig:		_	Bu	ilding code occupancy classification	: F-1	
	9A.2-1	9A.2-6			Electrical classification	none	
	9A.2-2	9A.2- 7		Safety-re	lated divisional equipment or cables	: none	
	9A.2-3	9A.2-8		Nonsafety-related redu	undant trains or equipment or cables	: none	
	9A.2-4	9A.2-9	Surround	ed by fire barriers rated at	3 hours		
	9A.2-5]	Except: basemat (non-rated)			
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-11500	1191	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
-6400				(outside stairwell			
-1000				at each landing)			
4650							
9060							
13570							
17500							
27000							
34000							
37000						<u> </u>	
			1 :	- 1 MI/	A1 ED		
			Anticipated combustible lo	ad, MJ/IIIZ	Assuming automatic & manual FP	equipment does not	
		/00		10ad IIIIII, MJ/III2	Tunction, impact of design basis in	e on sale shutdown.	
Agguming	noration of inc	tallad fire extinguishing as	minmont impost of fire upo	n ·	Complete burnout of all equipme	ent and cables within	
Assuming (loperation of ms	Nono	upment, impact of fife upor	11.	this Fire Area affects no safety-f	enated equipment; an	
Padial	ant operation.	None no radiological ma	storials prosont		safety divisions and both redund	ant trains A and D are	
Kauloi	L ife safety:	Travel distance limits to	FXITS moot NFPA 101		operable.		
Manu	al firefighting:	Access via exterior and i	nterior doors				
Iviana	Property loss:	Negligihle					
	1 toperty 1055.	110811811010			L		

Fire Area: F1192		Description:	Description: Stairwells C and F				
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804		
	DCD Fig:			Bu	ilding code occupancy classification:	F-1	
	9A.2-1	9A.2-6			Electrical classification:	none	
	9A.2-2	9A.2-7		Safety-re	lated divisional equipment or cables:	none	
	9A.2-3	9A.2-8		Nonsafety-related redu	undant trains or equipment or cables:	none	
	9A.2-4	9A.2-9	Surround	ed by fire barriers rated at	3 hours		
	9A.2-5			Except	: basemat (non-rated)		
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-11500	1192	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
-6400				(outside stairwell			
-1000				at each landing)			
4650							
9060							
13570	1691						
17500							
27000							
34000							
			7				
		negligible	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:	
		. 11 1 6	• • • • • • • • • •		Complete burnout of all equipme	ent and cables within	
Assuming o	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upo	n:	this Fire Area affects no safety-re	elated equipment; all	
	iant operation:	INONE			safety divisions and both redunds	ant trains A and B are	
Kadiol	ogical release:	None, no radiological ma	ateriais present		operable.		
Μ.	Life safety:	I ravel distance limits to	EXIIS meet NFPA 101				
Manu	ai firefighting:	Access via exterior and i	nterior doors				
	Property loss:	Negligible					

Fire Area: F1193		F1193	Description:	Description: Stairwell D				
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804			
	DCD Fig:			Bu	ilding code occupancy classification:	F-1		
	9A.2-1	9A.2-6			Electrical classification:	none		
	9A.2-2	9A.2-7		Safety-re	lated divisional equipment or cables:	none		
	9A.2-3	9A.2-8		Nonsafety-related redu	undant trains or equipment or cables:	none		
	9A.2-4	9A.2-9	Surround	ed by fire barriers rated at	3 hours			
	9A.2-5		Except: basemat (non-rated)					
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-11500	1193	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers		
-6400				(outside stairwell				
-1000				at each landing)				
4650								
9060								
13570								
17500								
27000								
34000								
			7					
		negligible	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
		. 11 1 6	· · · · · · · · · · · · · · · · · · ·		Complete burnout of all equipme	ent and cables within		
Assuming o	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upo	n:	this Fire Area affects no safety-re	elated equipment; all		
	lant operation:	None			safety divisions and both redunda	ant trains A and B are		
Kadiol	ogical release:	None, no radiological ma	aterials present		operable.			
Μ.	Life safety:	I ravel distance limits to	EXIIS meet NFPA 101					
Manu	ai nrengnting:	Access via exterior and i	nterior doors					
	Property loss:	Negligible						

Fire Area	.: F1194	Description:	Elevator B			
Building	: Reactor	Applicable codes:	IBC; Reg Guide 1.189; I	NFPA 10, 14, 72, 101, 804; ASME A	17.1	
DCD Fig:			Bu	ilding code occupancy classification:	F-1	
9A.2-1	9A.2-6	1		Electrical classification:	none	
9A.2-2	9A.2-7		Safety-re	elated divisional equipment or cables:	none	
9A.2-3	9A.2-8		Nonsafety-related red	undant trains or equipment or cables:	none	
9A.2-4	9A.2-9	Surrounded by fire barriers rated at: 3 hours				
9A.2-5			Except: basemat (non-rated); elevator doors (1.5 hr rated)			
of the following	ng Rooms:	Fire De	etection	Fire Suppress	sion	
Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
1194	Class IIIB lubricants Cable insulation Class IIIB lubricants	Area-wide ionization	Manual pulls (outside Elev at each landing)	ABC fire extinguishers (outside Elev at each landing) CO2 fire extinguisher	Hose racks (in nearby stairwell)	
	Cable insulation Electrical equipment			(outside room)		
	< 700 700	Anticipated combustible lo Unsprinklered combustible	vad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire	equipment does not e on safe shutdown:	
operation of in 'lant operation logical release Life safety ial firefighting	stalled fire extinguishing eq None: None, no radiological ma Travel distance limits to Access via stairwells and	aterials present EXITs meet NFPA 101 hoistway doors	n:	Complete burnout of all equipment and cables within this Fire Area affects no safety-related equipment; all safety divisions and both redundant trains A and B are operable.		
	Fire Area: Building: DCD Fig: 9A.2-1 9A.2-2 9A.2-3 9A.2-4 9A.2-5 of the followin Room # 1194 1980 1980	Fire Area: F1194 Building: Reactor DCD Fig: 9A.2-1 9A.2-6 9A.2-1 9A.2-7 9A.2-7 9A.2-3 9A.2-8 9A.2-9 9A.2-4 9A.2-9 9A.2-9 9A.2-5 9A.2-5 9A.2-9 of the following Rooms: Room # Potential Combustibles I194 Class IIIB lubricants Cable insulation Cable insulation 1980 Class IIIB lubricants Cable insulation Cable insulation I1980 Class IIIB lubricants Cable insulation Cable insulation Int operation of installed fire extinguishing equipment Image: State of the safety: Life safety: Image: None, no radiological mills to Access via stairwells and models and the safety:	Fire Area: F1194 Description: Building: Reactor Applicable codes: DCD Fig: 9A.2-1 9A.2-6 9A.2-1 9A.2-7 9A.2-7 9A.2-3 9A.2-9 Surround 9A.2-5 Surround Surround of the following Rooms: Fire De Primary Intervention Potential Combustibles Primary Intervention Class IIIB lubricants Area-wide ionization Intervention Class IIIB lubricants Cable insulation Insulation Electrical equipment Unsprinklered combustible lo Vonc 700 Anticipated combustible lo Operation of installed fire extinguishing equipment, impact of fire upo Plant operation: None None, no radiological materials present Life safety: Life safety: Travel distance limits to EXITs meet NFPA 101 Access via stairwells and hoistway doors	Fire Area: F1194 Description: Elevator B Building: Reactor Applicable codes: IBC; Reg Guide 1.189; M DCD Fig: Building: Building: Building: 9A.2-1 9A.2-6 9A.2-7 9A.2-7 9A.2-3 9A.2-7 Safety-related reding 9A.2-4 9A.2-9 Surrounded by fire barriers rated at Except of the following Rooms: Fire Detection Except Image: Surrounded by fire barriers rated at Except Surrounded by fire barriers rated at Except Of the following Rooms: Fire Detection Manual pulls (outside Elev at each landing) 1194 Class IIIB lubricants Cable insulation Area-wide ionization Manual pulls (outside Elev at each landing) 1980 Class IIIB lubricants Cable insulation Anticipated combustible load, MJ/m2 To0 Insprinklered combustible load, MJ/m2 Unsprinklered combustible load limit, MJ/m2 Surrounded fire extinguishing equipment, impact of fire upon: Part operation None, no radiological materials present Inferfighting: Access via stairwells and hoistway doors Life safety: Travel distance limits to EXITs meet NFPA 101 Access via stairwells and hoistway doors Burget via bat	Fire Area: F1194 Description: Elevator B Building; Reactor Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804; ASME A 9A.2-1 9A.2-6 Building code occupancy classification: 9A.2-2 9A.2-7 Safety-related divisional equipment or cables: 9A.2-3 9A.2-8 Nonsafety-related redundant trains or equipment or cables: 9A.2-5 Surrounded by fire barriers rated at: 3 hours 0f the following Rooms: Fire Detection Fire Suppress Room # Potential Combustibles Primary Backup Primary 1194 Class IIIB lubricants Area-wide ionization Manual pulls (outside Elev at each landing) ABC fire extinguishers (outside Elev at each landing) CO2 fire extinguishers (outside room) 1980 Class IIIB lubricants Cable insulation Anticipated combustible load, MJ/m2 Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment Life safety: Anticipated combustible load, MJ/m2 Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment Life safety: None, no radiological materials present Life safety: None, no radiological materials present Life safety: None, Nore Nore None,	

	Fire Area:	F1195	Description:	Interior Stairwell A		
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804	
		DCD Fig:		Bı	uilding code occupancy classification:	F-1
		9A.2-1	1		Electrical classification:	none
		9A.2-2		Safety-re	elated divisional equipment or cables:	none
		9A.2-3		Nonsafety-related rec	dundant trains or equipment or cables:	none
		9A.2-4	Surround	ed by fire barriers rated a	t: 3 hours	
				Excep	t: basemat (non-rated)	
L						
Consisting of	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-11200	1195	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers
-9100				(outside stairwell		
-6400				at each landing)		
-1000	L					
	L					
			7			
		negligible	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:
		. 11 1 0 1 1			Complete burnout of all equipme	nt and cables within
Assuming o	peration of ins	stalled fire extinguishing ec	juipment, impact of fire upor	n: I	this Fire Area affects no safety-re	lated equipment; all
PI	lant operation:	None			safety divisions and both redunda	ant trains A and B are
Radiol	ogical release:	None, no radiological ma	iterials present		operable.	
	Life satety:	Travel distance limits to	EXITs meet NFPA 101			
Manua	al firefighting:	Access via interior doors	3			
	Property loss:	Negligible				
1						

	Fire Area:	F1196	Description:	Interior Stairwell B		
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804	
		DCD Fig:	-	Bu	ilding code occupancy classification:	F-1
		9A.2-1			Electrical classification:	none
		9A.2-2		Safety-re	elated divisional equipment or cables:	none
		9A.2-3		Nonsafety-related red	undant trains or equipment or cables:	none
			Surrounde	ed by fire barriers rated at	: 3 hours	
				Except	: basemat (non-rated)	
]			
Consisting	of the followin	g Rooms:	Fire De	tection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-11200	1196	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers
-9100				(outside stairwell		
				at each landing)		
			 -			
		negligible	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not
		700	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:
					Complete burnout of all equipme	nt and cables within
Assuming o	peration of ins	stalled fire extinguishing ec	juipment, impact of fire upor	n:	this Fire Area affects no safety-re	elated equipment; all
Pl	lant operation:	None			safety divisions and both redunda	ant trains A and B are
Radiol	ogical release:	None, no radiological ma	aterials present		operable.	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101			
Manua	al firefighting:	Access via interior doors	1			
	Property loss:	Negligible				

	Fire Area:	. F1197	Description:	Interior Stairwell C		
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804	
		DCD Fig:		Bu	uilding code occupancy classification:	F-1
		9A.2-1	1		Electrical classification:	none
		9A.2-2		Safety-re	elated divisional equipment or cables:	none
		9A.2-3		Nonsafety-related red	lundant trains or equipment or cables:	none
			Surrounde	ed by fire barriers rated a	t: 3 hours	
				Excep	t: basemat (non-rated)	
]			
Consisting	of the followin	1g Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-11200	1197	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers
-6400	1			(outside stairwell		-
				at each landing)		
		negligible	Anticipated combustible log	ad, MJ/m2	Assuming automatic & manual FP	equipment does not
		700	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:
					Complete burnout of all equipme	nt and cables within
Assuming c	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upor	n:	this Fire Area affects no safety-re	lated equipment; all
P	lant operation:	None			safety divisions and both redunda	ant trains A and B are
Radiol	ogical release:	None, no radiological ma	aterials present		operable.	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101			
Manu	al firefighting:	Access via interior doors	\$			
	Property loss:	Negligible				

	Fire Area:	F1198	Description:	Interior Stairwell D		
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804	
		DCD Fig:		Bu	ilding code occupancy classification:	F-1
	I	9A.2-1	1		Electrical classification:	none
	I	9A.2-2		Safety-re	elated divisional equipment or cables:	none
	I	9A.2-3		Nonsafety-related red	undant trains or equipment or cables:	none
	I		Surrounde	ed by fire barriers rated at	t: 3 hours	
	I			Except	t: basemat (non-rated)	
Consisting (of the followin	g Rooms.	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
			Ī			
-11200	1198	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers
-9100				(outside stairwell		
-6400				at each landing)		
			1	G,		
	I	negligible	Anticipated combustible log	ad, MJ/m2	Assuming automatic & manual FP	equipment does not
	I	700	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:
			-		Complete burnout of all equipme	ent and cables within
Assuming o	peration of ins	stalled fire extinguishing ec	juipment, impact of fire upor	n:	this Fire Area affects no safety-re	lated equipment; all
Pl	lant operation:	None		l	safety divisions and both redund?	ant trains A and B are
Radiol	ogical release:	None, no radiological ma	aterials present	I	operable.	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101			
Manua	al firefighting:	Access via interior doors	š			
	Property loss:	Negligible		l		

	Fire Area:	F1203	Description:	CRD and Containment A	Access			
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, <u>13</u> , 14, 72, 101, 804			
		DCD Fig:		Bui	lding code occupancy classification:	F-1		
		9A.2-2		Electrical classification: none				
		9A.2-3		Safety-rel	ated divisional equipment or cables:	II		
		9A.2-4	Nonsafety-related redundant trains or equipment or cables: A , B					
			Surrounded by fire barriers rated at: 3 hours					
				Except:	none			
L			•					
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-6400	1203	Class IIIB lubricants	Cross-zoned ionization	Suppression flowswitch	Preaction sprinkler	Hose racks		
		Cable insulation	and spot heat		12.2 L/min per m2	(in nearby stairwells)		
					over entire area			
-1000	1302, 1308	Class IIIB lubricants	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers		
		Cable insulation		(outside stairwells	(in nearby stairwells)			
	1307	Electical equipment		at each landing)		CO2 fire extinguishers,		
		Class IIIB lubricants				ABC fire extinguishers		
		Cable insulation						
		700 (1000)	1					
		> 700 (room 1203)	Anticipated combustible ic	bad, MJ/m2				
		< 700 (other rooms)	Anticipated combustible ic	bad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
		. 11 1 (* 1 .	· · · · · · · · · · · · · · · · · · ·		Complete burnout of all equipme	nt and cables within		
Assuming c	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upo	n: I	this Fire Area affects redundant	nonsafety-related CRD		
Padial	lant operation:	Reactor scram; outage re	equired to restore		pumps A and B, but does not affe	ct any safety-related		
Kadioi	logical release:	Contained within buildin	IS EVIT: magad NEDA 101		equipment; all safety divisions an	d both A and B		
Мани	Life safety:	I ravel distance limits to	EXITS meet NFPA 101		nonsafety-related on-site power s	ources are unaffected		
Ivianua	al firengnting.	Access via stairweiis			by fire and are operable.			
	Property loss:	Moderate		-				

	Fire Area:	F1210	Description:	Division I Battery		
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804	
		DCD Fig:	- -	Bui	ilding code occupancy classification:	F-1 per IBC 307.9.11
		9A.2-2			Electrical classification:	none
		9A.2-3		Safety-re!	lated divisional equipment or cables:	I
				Nonsafety-related redu	undant trains or equipment or cables:	none
			Surround	ed by fire barriers rated at:	: 3 hours	
				Except:	: elevator doors (1.5 hr rated)	
Consisting of	of the followin	g Rooms:	Fire De	etection	Fire Suppress	sion
	- "	Potential Combustibles		- 1		
EL	Room #	and Hazards	Primary	Backup	Primary	Backup
	ļ				!	
-6400	1210	12,360 L of battery acid	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks
		Battery cell cases		(outside stairwell)		(in nearby stairwell)
	l	Cable insulation			<u> </u>	
	<u> </u>					
		< 1400	1 aa b b cb c c c c c c c c c c	- 1 MI/		· ····
		< 1400	Anticipated combustible io	ad, MJ/mZ	Assuming automatic & manual FF e	equipment does not
		1400	Unsprinkiered combustible	load limit, MJ/m2	function, impact of design basis file	on safe snutdown:
A aggreging a	monotion of in	stallad fina antinamiahina ag			Complete burnout of all equipment	nt and cables within
Assuming o	peration of me	stalled fire extinguishing eq	upment, impact of the upo	n:	this fire Area results in loss of on	ly Safety Division 1
r	ant operation.	None Nara na radialogiaal ma	torials present		equipment; remaining three sale	ty divisions and boun
Dedial	ogical release	None, no radiological ma	terials present		redundant A and B equipment ar	e unaffected by fire and
Radiol	T ife cofetre	Treased distance limits to 1	EVIT- most NEDA 101			4 1 ala ana a (ana a tanà
Radiol	Life safety:	Travel distance limits to	EXITs meet NFPA 101		are operable. Automatic logic col	ntrol scheme (any two
Radiol Manua	Life safety: al firefighting:	Travel distance limits to Access via stairwell and i	EXITs meet NFPA 101 nterior doors		are operable. Automatic logic colout of four redundant signals) rem	ntrol scheme (any two nains operable.

	Fire Area:	F1220	Description:	Division II Battery				
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 101, 804			
		DCD Fig:		Bui	lding code occupancy classification:	F-1 per IBC 307.9.11		
		9A.2-2			Electrical classification:	none		
		9A.2-3		Safety-rel	ated divisional equipment or cables:	II		
				Nonsafety-related redu	ndant trains or equipment or cables:	none		
			Surround	ed by fire barriers rated at:	3 hours			
				Except:	elevator doors (1.5 hr rated)			
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppress	sion		
FI	D "	Potential Combustibles	D.		D.:			
EL	Room #	and Hazards	Primary	Backup	Primary	Backup		
		14 4 COT 61 44		M		1 11 1		
-6400	1220	12,360 L of battery acid	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks		
-6400	1220	Battery cell cases	Area-wide ionization	(outside stairwell)	CO2 fire extinguishers	Hose racks (in nearby stairwell)		
-6400	1220	12,360 L of battery acid Battery cell cases Cable insulation	Area-wide ionization	(outside stairwell)	CO2 fire extinguishers	Hose racks (in nearby stairwell)		
-6400 	1220	12,360 L of battery acid Battery cell cases Cable insulation	Area-wide ionization	(outside stairwell)	CO2 fire extinguishers	Hose racks (in nearby stairwell)		
-6400	1220	12,360 L of battery acid Battery cell cases Cable insulation	Area-wide ionization	(outside stairwell)	CO2 fire extinguishers	(in nearby stairwell)		
-6400 	1220	12,360 L of battery acid Battery cell cases Cable insulation < 1400	Area-wide ionization	outside stairwell)	Assuming automatic & manual FP of function imposed of design basis for	equipment does not		
-6400	1220	12,360 L of battery acid Battery cell cases Cable insulation < 1400	Area-wide ionization Anticipated combustible lo Unsprinklered combustible	outside stairwell) ead, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP of function, impact of design basis fire	equipment does not		
-6400	1220	12,360 L of battery acid Battery cell cases Cable insulation < 1400	Area-wide ionization Anticipated combustible lo Unsprinklered combustible	wanuar puns (outside stairwell) pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipme	equipment does not e on safe shutdown: nt and cables within		
-6400 Assuming c	1220	12,360 L of battery acid Battery cell cases Cable insulation <1400 1400 stalled fire extinguishing eq	Area-wide ionization Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo	pad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipme this Fire Area results in loss of on	equipment does not e on safe shutdown: nt and cables within ly Safety Division II ty divisions and both		
-6400 Assuming of Padial	pperation of instant operation:	12,360 L of battery acid Battery cell cases Cable insulation <1400	Area-wide ionization Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo	outside stairwell) pad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; remaining three safe	equipment does not e on safe shutdown: nt and cables within ly Safety Division II ty divisions and both		
-6400 Assuming o P Radiol	1220 operation of ins lant operation: ogical release:	12,360 L of battery acid Battery cell cases Cable insulation <1400	Area-wide ionization Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo terials present	outside stairwell) pad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; remaining three safe redundant A and B equipment ar	equipment does not e on safe shutdown: nt and cables within ly Safety Division II ty divisions and both re unaffected by fire and		
-6400 Assuming c P Radiol Manu	pperation of ins lant operation: ogical release: Life safety:	12,360 L of battery acid Battery cell cases Cable insulation < 1400	Area-wide ionization Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo terials present EXITs meet NFPA 101 proviou doors	outside stairwell) ead, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; remaining three safe redundant A and B equipment ar are operable. Automatic logic co	equipment does not e on safe shutdown: nt and cables within ly Safety Division II ty divisions and both re unaffected by fire and ontrol scheme (any two		
-6400 Assuming c P Radiol Manu	pperation of ins lant operation: ogical release: Life safety: al firefighting:	12,360 L of battery acid Battery cell cases Cable insulation < 1400 1400 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to Access via stairwell and i Moderate	Area-wide ionization Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo terials present EXITs meet NFPA 101 nterior doors	outside stairwell) ead, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; remaining three safe redundant A and B equipment ar are operable. Automatic logic co out of four redundant signals) rer	equipment does not e on safe shutdown: nt and cables within ily Safety Division II ty divisions and both re unaffected by fire and ontrol scheme (any two mains operable.		
Building: Reactor DCD Fig: Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804 9A.2-3 Building: code occupancy classification: F-1 per IBC 307.9.11 9A.2-3 Building: code occupancy classification: Immediation 9A.2-3 Safety-related divisional equipment or cables: Immediation 9A.2-3 Nonsafety-related redundant trains or equipment or cables: Immediation Surrounded by fire barriers rated at: Bours Immediation Immediation Consisting of the following Rooms: Fire Detection Fire Suppression Immediation Consisting of the following Rooms: Fire Detection Fire Suppression Immediation 6400 1230 6840 L of battery acid Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) -6400 1230 6840 L of battery acid Anticipated combustible load, MJ/m2 (usprinklered combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Complete burnout of all equipment and cables within this Fire Area results in loss of only Safety Division III equipment of allos of only Safety Division and both redundant A and B equipment are unaffected by fire an are operable.		Fire Area: F1230 Description: Division III Battery						
--	--	--	--	--	--	--	--	--
DCD Fig: 9A.2-2 9A.2-3 Safety-related divisional equipment or cables: III III Nonsafety-related redundant trains or equipment or cables: III Nonsafety-related redundant trains or equipment or cables: III Surrounded by fire barriers rated at: 3 hours EL Room # Potential Combustibles Potential Combustibles Primary Backup Primary Backup Primary 6400 1230 6840 L of battery acid Battery cell cases Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Plant operation: None, no radiological materials present Complete burnout of all equipment are unaffected by fire an Life safety; Travel distance limits to EXITs meet NFPA 101 Automatic logic control scheme (any two out of four redundant signals) remains operable.		Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804		
9A.2-2 9A.2-2 Safety-related divisional equipment or cables: III 9A.2-3 Nonsafety-related redundant trains or equipment or cables: III Surrounded by fire barriers rated at: 3 hours none Surrounded by fire barriers rated at: 3 hours none Except: none none Potential Combustibles and Hazards Primary Backup Primary Backup Primary -6400 1230 6840 L of battery acid Battery cell cases Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -			DCD Fig:		Bu	ilding code occupancy classification:	F-1 per IBC 307.9.11	
9A.2-3 Safety-related divisional equipment or cables: III Nonsafety-related divisional equipment or cables: Inone Inone Surrounded by fire barriers rated at: Except: Inone Inone Consisting of the following Rooms: Fire Detection EL Room # Potential Combustibles Primary Backup -6400 1230 6840 L of battery acid Battery cell cases Area-wide ionization Manual pulls Cable insulation Complete burnout of all equipment and cables within Table operation: None Plant operation: None Radiological release: None. None Interview UST is to EXIT's meet NFPA 101 Manual firefighting: Access via stairwell and interior doors	l		9A.2-2			Electrical classification:	none	
Nonsafety-related redundant trains or equipment or cables: none Surrounded by fire barriers rated at: 3 hours Surrounded by fire barriers rated at: 3 hours Consisting of the following Rooms: Fire Detection Potential Combustibles Primary Backup Primary Backup -6400 1230 6840 L of battery acid Battery cell cases Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Anticipated combustible load, MJ/m2 Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment and cables within this Fire Area results in loss of only Safety Division III equipment; remaining three safety divisions and both redundant A and B equipment are unaffected by fire an are operable. None, no radiological materials present Infersifying: Access via stairwell and interior doors NFPA 101 are operable. Automatic logic control scheme (any two out of four redundant signals) remains operable.			9A.2-3	Safety-related divisional equipment or cables: III				
Surrounded by fire barriers rated at: Brecept: Innee Surrounded by fire barriers rated at: Except: Innee Surrounded by fire barriers rated at: Except: Innee Consisting of the following Rooms: Fire Detection Fire Suppression Potential Combustibles and Hazards Primary Backup Primary Backup Primary Backup -6400 1230 6840 L of battery acid Battery cell cases Cable insulation Area-wide ionization (outside stairwell) Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Cable insulation Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Complete burnout of all equipment and cables within this Fire Area results in loss of only Safety Division III equipment; remaining three safety divisions and both redundant A and B equipment are unaffected by fire an are operable. Automatic logic control scheme (any two out of four redundant signals) remains operable.					Nonsafety-related redu	andant trains or equipment or cables:	none	
Consisting of the following Rooms: Fire Detection Fire Suppression Consisting of the following Rooms: Potential Combustibles and Hazards Primary Backup Primary Backup EL Room # and Hazards Primary Backup Primary Backup -6400 1230 6840 L of battery acid Battery cell cases Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Cable insulation Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None None, no radiological materials present Complete burnout of all equipment and cables within this Fire Area results in loss of only Safety Division III equipment; remaining three safety divisions and both redundant A and B equipment are unaffected by fire an are operable. Automatic logic control scheme (any two out of four redundant signals) remains operable.	l			Surround	ed by fire barriers rated at	: 3 hours		
Fire Detection Fire Suppression Consisting of the following Rooms: Potential Combustibles Primary Backup Primary Backup EL Room # and Hazards Primary Backup Primary Backup -6400 1230 6840 L of battery acid Battery cell cases Cable insulation Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Cable insulation Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Complete burnout of all equipment and cables within this Fire Area results in loss of only Safety Division III equipment; remaining three safety divisions and both redundant A and B equipment are unaffected by fire an are operable. Automatic logic control scheme (any two out of four redundant signals) remains operable.					Except	: none		
Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup Primary Backup -6400 1230 6840 L of battery acid Battery cell cases Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) -6400 1230 6840 L of battery acid Battery cell cases Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Anticipated combustible load, MJ/m2 1400 Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: Radiological release: Life safety: Manual firefighting: None, no radiological materials present Life safety: Manual firefighting: Access via stairwell and interior doors None, no radiological materials present Life safety: Manual firefighting: Access via stairwell and interior doors None Note case operable. Automatic logic control scheme (any two out of four redundant signals) remains operable.								
Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup Primary Backup -6400 1230 6840 L of battery acid Battery cell cases Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) -6400 1230 6840 L of battery acid Battery cell cases Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Anticipated combustible load, MJ/m2 1400 Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via stairwell and interior doors Antor redundant signals) remains operable.	L							
EL Potential Combustibles and Hazards Primary Backup Primary Backup -6400 1230 6840 L of battery acid Battery cell cases Cable insulation Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) -6400 1230 6840 L of battery acid Battery cell cases Cable insulation Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell)	Consisting of	f the followin	g Rooms:	Fire De	etection	Fire Suppress	sion	
EL Room # and Hazards Primary Backup Primary Backup -6400 1230 6840 L of battery acid Battery cell cases Cable insulation Area-wide ionization Battery cell cases Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Coll 6840 L of battery acid Battery cell cases Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Coll Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: Life safety: Life safety: Manual firefighting: None, no radiological materials present Life safety: Manual firefighting: None, no radiological materials present Life safety: None, no radiological materials present Complete burnout of all equipment are unaffected by fire an are operable. Automatic logic control scheme (any two out of four redundant signals) remains operable.	i 1		Potential Combustibles					
-6400 1230 6840 L of battery acid Battery cell cases Cable insulation Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) -6400 1230 6840 L of battery acid Battery cell cases Cable insulation Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) -6400 1230 6840 L of battery acid Battery cell cases Cable insulation Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) -6400	EL	Room #	and Hazards	Primary	Backup	Primary	Backup	
-6400 1230 6840 L of battery acid Battery cell cases Cable insulation Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Coll Coll Second Area-wide ionization Manual pulls (outside stairwell) CO2 fire extinguishers Hose racks (in nearby stairwell) Anticipated combustible load, MJ/m2 Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: Life safety: None, no radiological materials present Complete burnout of all equipment are unaffected by fire an are operable. Compresent Manual firefighting: Access via stairwell and interior doors For event of design basis fire on safe shutdown: Complete burnout of all equipment and cables within this Fire Area results in loss of only Safety Division III equipment; remaining three safety divisions and both redundant A and B equipment are unaffected by fire an are operable.								
Battery cell cases Cable insulation (outside stairwell) (in nearby stairwell) Cable insulation (in nearby stairwell) (in nearby stairwell) Able insulation (in nearby stairwell) (in nearby stairwell) Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None None Radiological release: Life safety: Manual firefighting: None, no radiological materials present Complete burnout of all equipment and cables within this Fire Area results in loss of only Safety Division III equipment; remaining three safety divisions and both redundant A and B equipment are unaffected by fire an are operable. Automatic logic control scheme (any two out of four redundant signals) remains operable.	-6400	1230	6840 L of battery acid	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks	
Cable insulation Cable insulation Anticipated combustible load, MJ/m2 1400 Unsprinklered combustible load limit, MJ/m2 Assuming operation of installed fire extinguishing equipment, impact of fire upon: Assuming operation: Plant operation: None None, no radiological materials present Complete burnout of all equipment and cables within this Fire Area results in loss of only Safety Division III equipment; remaining three safety divisions and both redundant A and B equipment are unaffected by fire an are operable. Automatic logic control scheme (any two out of four redundant signals) remains operable.	i 1		Battery cell cases		(outside stairwell)		(in nearby stairwell)	
< 1400 Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None None None, no radiological materials present Complete burnout of all equipment and cables within this Fire Area results in loss of only Safety Division III equipment; remaining three safety divisions and both redundant A and B equipment are unaffected by fire an are operable. Automatic logic control scheme (any two out of four redundant signals) remains operable.	Cable insulation							
< 1400				L				
< 1400								
1400 Unsprinklered combustible load limit, MJ/m2 Assuming operation of installed fire extinguishing equipment, impact of fire upon: Fire Area results in loss of only Safety Division III Plant operation: None Radiological release: None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via stairwell and interior doors				1				
Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None Radiological release: Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via stairwell and interior doors None Manual fire fighting: None Manual fire fighting: None			< 1400	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP e	equipment does not	
Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: Radiological release: Life safety: Manual firefighting: Access via stairwell and interior doors Nature operable. None in radiological materials present Life safety: Manual firefighting: None in radiological materials present Life safety: Manual firefighting: None in radiological materials present Life safety: Manual firefighting: None in radiological materials present Life safety: None in radiological materials present None in radiological materia			<1400 1400	Anticipated combustible lo Unsprinklered combustible	ead, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire	equipment does not e on safe shutdown:	
Plant operation: None Radiological release: None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via stairwell and interior doors			<1400 1400	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen	equipment does not on safe shutdown: nt and cables within	
Radiological release: None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via stairwell and interior doors	Assuming op	eration of ins	< 1400 1400 talled fire extinguishing eq	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo	ad, MJ/m2 9 load limit, MJ/m2 n:	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on	equipment does not e on safe shutdown: nt and cables within ly Safety Division III	
Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via stairwell and interior doors Description: Note: Access via stairwell and interior doors	Assuming op Pla	peration of ins nt operation:	< 1400 1400 stalled fire extinguishing eq None	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo	ad, MJ/m2 ; load limit, MJ/m2 n:	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; remaining three safet	equipment does not e on safe shutdown: nt and cables within ly Safety Division III ty divisions and both	
Manual firefighting: Access via stairwell and interior doors out of four redundant signals) remains operable.	Assuming op Pla Radiolog	eration of ins nt operation: gical release:	<1400 1400 stalled fire extinguishing eq None None, no radiological ma	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo	ad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; remaining three safet redundant A and B equipment are	equipment does not e on safe shutdown: nt and cables within ly Safety Division III ty divisions and both e unaffected by fire and	
	Assuming op Pla Radiolog	eration of ins nt operation: gical release: Life safety:	<1400 1400 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo terials present EXITs meet NFPA 101	ad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen this Fire Area results in loss of on equipment; remaining three safet redundant A and B equipment are are operable. Automatic logic co	equipment does not e on safe shutdown: nt and cables within ly Safety Division III ty divisions and both e unaffected by fire and ntrol scheme (any two	
Property loss: Moderate	Assuming op Pla Radioloş Manual	eration of ins nt operation: gical release: Life safety: firefighting:	< 1400 1400 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to Access via stairwell and i	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo terials present EXITs meet NFPA 101 interior doors	ad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen this Fire Area results in loss of on equipment; remaining three safet redundant A and B equipment are are operable. Automatic logic co out of four redundant signals) rem	equipment does not e on safe shutdown: nt and cables within ly Safety Division III ty divisions and both e unaffected by fire and ntrol scheme (any two nains operable.	

	Fire Area: F1240 Description: Division IV Battery					
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804	
		DCD Fig:		Bui	lding code occupancy classification:	F-1 per IBC 307.9.11
		9A.2-2			Electrical classification:	none
		9A.2-3		Safety-rel	lated divisional equipment or cables:	IV
				Nonsafety-related redu	indant trains or equipment or cables:	none
			Surround	ed by fire barriers rated at:	3 hours	
				Except:	none	
L						
Consisting	of the followir	ig Rooms:	Fire De	etection	Fire Suppress	sion
		Potential Combustibles				
EL	Room #	and Hazards	Primary	Backup	Primary	Backup
	• • • • • • •		Area-wide ionization Manual pulls			
-6400	1240	6840 L of battery acid	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks
-6400	1240	6840 L of battery acid Battery cell cases	Area-wide ionization	Manual pulls (outside stairwell)	CO2 fire extinguishers	Hose racks (in nearby stairwell)
-6400	1240	6840 L of battery acid Battery cell cases Cable insulation	Area-wide ionization	Manual pulls (outside stairwell)	CO2 fire extinguishers	Hose racks (in nearby stairwell)
-6400	1240	6840 L of battery acid Battery cell cases Cable insulation	Area-wide ionization	Manual pulls (outside stairwell)	CO2 fire extinguishers	Hose racks (in nearby stairwell)
-6400	1240	6840 L of battery acid Battery cell cases Cable insulation	Area-wide ionization	Manual pulls (outside stairwell)	CO2 fire extinguishers	Hose racks (in nearby stairwell)
-6400	1240	6840 L of battery acid Battery cell cases Cable insulation < 1400	Area-wide ionization	Manual pulls (outside stairwell) pad, MJ/m2	CO2 fire extinguishers Assuming automatic & manual FP of functions immediate for the second s	Hose racks (in nearby stairwell)
-6400	1240	6840 L of battery acid Battery cell cases Cable insulation < 1400 1400	Area-wide ionization Anticipated combustible lo Unsprinklered combustible	Manual pulls (outside stairwell) pad, MJ/m2 e load limit, MJ/m2	CO2 fire extinguishers Assuming automatic & manual FP of function, impact of design basis fire	Hose racks (in nearby stairwell) equipment does not e on safe shutdown:
-6400	1240	6840 L of battery acid Battery cell cases Cable insulation < 1400 1400	Area-wide ionization Anticipated combustible lo Unsprinklered combustible	Manual pulls (outside stairwell) pad, MJ/m2 e load limit, MJ/m2	CO2 fire extinguishers Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipme	Hose racks (in nearby stairwell) equipment does not e on safe shutdown: nt and cables within
-6400 Assuming o	1240	6840 L of battery acid Battery cell cases Cable insulation < 1400 1400 stalled fire extinguishing eq	Area-wide ionization Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo	Manual pulls (outside stairwell) pad, MJ/m2 e load limit, MJ/m2 n:	CO2 fire extinguishers Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on	Hose racks (in nearby stairwell) equipment does not e on safe shutdown: nt and cables within ily Safety Division IV
-6400 Assuming of Padial	pperation of inslant operation:	6840 L of battery acid Battery cell cases Cable insulation < 1400 1400 stalled fire extinguishing eq None	Area-wide ionization Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo	Manual pulls (outside stairwell) pad, MJ/m2 e load limit, MJ/m2 n:	CO2 fire extinguishers Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; remaining three safe	Hose racks (in nearby stairwell) equipment does not e on safe shutdown: nt and cables within ily Safety Division IV ty divisions and both
-6400 Assuming o P Radiol	pperation of inslant operation: ogical release:	6840 L of battery acid Battery cell cases Cable insulation < 1400 1400 stalled fire extinguishing eq None None, no radiological ma	Area-wide ionization Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo terials present	Manual pulls (outside stairwell) pad, MJ/m2 e load limit, MJ/m2 n:	CO2 fire extinguishers Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; remaining three safe redundant A and B equipment ar	Hose racks (in nearby stairwell) equipment does not e on safe shutdown: nt and cables within ily Safety Division IV ty divisions and both re unaffected by fire and
-6400 Assuming o P Radiol	1240 operation of ins lant operation: ogical release: Life safety:	6840 L of battery acid Battery cell cases Cable insulation < 1400 1400 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to	Area-wide ionization Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo terials present EXITs meet NFPA 101	Manual pulls (outside stairwell) pad, MJ/m2 e load limit, MJ/m2 n:	CO2 fire extinguishers Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; remaining three safe redundant A and B equipment ar are operable. Automatic logic co	Hose racks (in nearby stairwell) equipment does not e on safe shutdown: nt and cables within ly Safety Division IV ty divisions and both re unaffected by fire and ontrol scheme (any two
-6400 Assuming o P Radiol Manu	pperation of inslant operation: ogical release: Life safety: al firefighting:	6840 L of battery acid Battery cell cases Cable insulation < 1400 1400 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to Access via stairwell and i	Area-wide ionization Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo iterials present EXITs meet NFPA 101 interior doors	Manual pulls (outside stairwell) pad, MJ/m2 e load limit, MJ/m2 n:	CO2 fire extinguishers Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; remaining three safe redundant A and B equipment ar are operable. Automatic logic co out of four redundant signals) rer	Hose racks (in nearby stairwell) equipment does not e on safe shutdown: nt and cables within ly Safety Division IV ty divisions and both re unaffected by fire and ontrol scheme (any two mains operable.

Fire Area: F1262 Description: B Demineralizers							
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; I	NFPA 10, 14, 72, 101, 804		
		DCD Fig:	_	Bu	ilding code occupancy classification:	F-1	
		9A.2-2	Electrical classification: none				
		9A.2-3		Safety-re	lated divisional equipment or cables:	none	
				Nonsafety-related red	undant trains or equipment or cables:	В	
			Surround	ed by fire barriers rated at	: 3 hours		
				Except	: none		
Consisting	of the followin	a Doome:	Fire De	tation	Eiro Supprov	sion	
EL	Room #	g Rooms. Potential Combustibles	Primary	Backun	Primary	Backun	
		I otentiai Combustiones	1 111101 y	Duckup	1 milar y	Бискир	
-6400	1261	Class IIIR lubricants	A rea-wide ionization	Process indication	Hose racks at stairwells	ARC fire extinguishers	
-6400	1261 1262	Class IIIB lubricants	Area-wide ionization	Process indication	Hose racks at stairwells (via hatches at EL -1000)	ABC fire extinguishers (at EL -1000)	
-6400	1261 1262	Class IIIB lubricants Cable insulation	Area-wide ionization	Process indication	Hose racks at stairwells (via hatches at EL -1000)	ABC fire extinguishers (at EL -1000)	
-6400	1261 1262	Class IIIB lubricants Cable insulation	Area-wide ionization	Process indication	Hose racks at stairwells (via hatches at EL -1000)	ABC fire extinguishers (at EL -1000)	
-6400	1261 1262	Class IIIB lubricants Cable insulation < 700	Area-wide ionization Anticipated combustible lo	Process indication	Hose racks at stairwells (via hatches at EL -1000) Assuming automatic & manual FP	ABC fire extinguishers (at EL -1000)	
-6400	1261 1262	Class IIIB lubricants Cable insulation < 700 700	Area-wide ionization Anticipated combustible lo Unsprinklered combustible	Process indication ad, MJ/m2 cload limit, MJ/m2	Hose racks at stairwells (via hatches at EL -1000) Assuming automatic & manual FP function, impact of design basis fire	ABC fire extinguishers (at EL -1000) equipment does not e on safe shutdown:	
-6400	1261 1262	Class IIIB lubricants Cable insulation < 700 700	Area-wide ionization Anticipated combustible lo Unsprinklered combustible	Process indication ad, MJ/m2 bload limit, MJ/m2	Hose racks at stairwells (via hatches at EL -1000) Assuming automatic & manual FP function, impact of design basis first Complete burnout of all equipme	ABC fire extinguishers (at EL -1000) equipment does not e on safe shutdown: ent and cables within	
-6400	1261 1262	Class IIIB lubricants Cable insulation < 700 700 .talled fire extinguishing ec	Area-wide ionization Anticipated combustible lo Unsprinklered combustible quipment, impact of fire upon	Process indication ad, MJ/m2 bload limit, MJ/m2 n:	Hose racks at stairwells (via hatches at EL -1000) Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area results in loss of on	ABC fire extinguishers (at EL -1000) equipment does not e on safe shutdown: ent and cables within hly redundant train B	
-6400 Assuming o	1261 1262 operation of ins lant operation:	Class IIIB lubricants Cable insulation < 700 700 :talled fire extinguishing ec None	Area-wide ionization Anticipated combustible lo Unsprinklered combustible quipment, impact of fire upor	Process indication ad, MJ/m2 e load limit, MJ/m2 n:	Hose racks at stairwells (via hatches at EL -1000) Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; all safety divisions an	ABC fire extinguishers (at EL -1000) equipment does not e on safe shutdown: ent and cables within aly redundant train B nd train A equipment	
-6400 Assuming o P Radiol	1261 1262 operation of ins lant operation: ogical release:	Class IIIB lubricants Cable insulation < 700 700 :talled fire extinguishing eco None Contained within buildin	Area-wide ionization Anticipated combustible lo Unsprinklered combustible quipment, impact of fire upon	Process indication ad, MJ/m2 e load limit, MJ/m2 n:	Hose racks at stairwells (via hatches at EL -1000) Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; all safety divisions and are unaffected by fire and are opp	ABC fire extinguishers (at EL -1000) equipment does not e on safe shutdown: ent and cables within and redundant train B nd train A equipment erable. Both A and B	
-6400 Assuming o P Radiol	1261 1262 operation of ins lant operation: ogical release: Life safety:	Class IIIB lubricants Cable insulation < 700 700 :talled fire extinguishing eco None Contained within buildin Travel distance limits to	Area-wide ionization Anticipated combustible lo Unsprinklered combustible quipment, impact of fire upon ng Exits meet NFPA 101	Process indication ad, MJ/m2 e load limit, MJ/m2 n:	Hose racks at stairwells (via hatches at EL -1000) Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area results in loss of on equipment; all safety divisions an are unaffected by fire and are op- on-site power sources are unaffect	ABC fire extinguishers (at EL -1000) equipment does not e on safe shutdown: ent and cables within ally redundant train B nd train A equipment erable. Both A and B eted by fire and are	
-6400 Assuming o P Radiol Manu	1261 1262 operation of ins lant operation: ogical release: Life safety: al firefighting:	Class IIIB lubricants Cable insulation <700 700 :talled fire extinguishing ec None Contained within buildin Travel distance limits to Limited access via hatch	Area-wide ionization Anticipated combustible lo Unsprinklered combustible quipment, impact of fire upon ng Exits meet NFPA 101 des	Process indication ad, MJ/m2 e load limit, MJ/m2 n:	Hose racks at stairwells (via hatches at EL -1000) Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area results in loss of on equipment; all safety divisions an are unaffected by fire and are op on-site power sources are unaffector operable.	ABC fire extinguishers (at EL -1000) equipment does not e on safe shutdown: ent and cables within and rables within and train A equipment erable. Both A and B eted by fire and are	
-6400 Assuming o P Radiol Manu	1261 1262 operation of ins lant operation: ogical release: Life safety: al firefighting: Property loss:	Class IIIB lubricants Cable insulation < 700 700 :talled fire extinguishing ec None Contained within buildin Travel distance limits to Limited access via hatch Minor	Area-wide ionization Anticipated combustible lo Unsprinklered combustible quipment, impact of fire upon ng Exits meet NFPA 101 tes	Process indication ead, MJ/m2 e load limit, MJ/m2 n:	Hose racks at stairwells (via hatches at EL -1000) Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipmen this Fire Area results in loss of on equipment; all safety divisions an are unaffected by fire and are op on-site power sources are unaffect operable.	ABC fire extinguishers (at EL -1000) equipment does not e on safe shutdown: ent and cables within ally redundant train B nd train A equipment erable. Both A and B eted by fire and are	

	Fire Area:	F1311	Description:	Division I Electrical			
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 1 <u>01, 804</u>		
	DCD Fig:			Bui	ilding code occupancy classification:	F-1	
	9A.2-2	9A.2-6]		Electrical classification: none		
	9A.2-3	9A.2-7		Safety-rel	lated divisional equipment or cables:	I	
	9A.2-4	9A.2-8		Nonsafety-related redundant trains or equipment or cables: none			
	9A.2-5		Surround	ed by fire barriers rated at:	3 hours		
			Except: elevator doors (1.5 hr rated)				
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-6400	1211	Cable insulation	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks	
-1000	1311	Electrical equipment		(outside stairwell	_	at stairwells	
l	1313	Cable insulation		at each landing)			
13570	1610						
17500	1711						
1	1700, 1712	Cable insulation	1		ABC fire extinguishers		
1	1713	Class IIIB lubricants					
	1710	Electical equipment	1		ABC fire extinguishers, CO2 fire		
		Cable insulation			extinguishers		
		Class IIIB lubricants			_		
		< 1400	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP e	equipment does not	
		1400	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	on safe shutdown:	
			-		Complete burnout of all equipment	nt and cables within	
Assuming (operation of ins	stalled fire extinguishing eq	uipment, impact of fire upo	n:	this Fire Area results in loss of on	ly Safety Division I	
Р	lant operation:	None			equipment; remaining three safe	ty divisions and both	
Radiol	logical release:	None, no radiological ma	aterials present		redundant A and B equipment ar	e unaffected by fire and	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		are operable. Automatic logic co	ntrol scheme (any two	
Manu	al firefighting:	Access via stairwell and	interior doors		out of four redundant signals) ren	nains operable.	
	Property loss:	Significant			, , , , , , , , , , , , , , , , , , ,		
	1 2						

	Fire Area	: F1321	Description:	Division II Electrical			
	Building	: Reactor	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804		
	DCD Fig:			Bu	ilding code occupancy classification:	F-1	
	9A.2-2	9A.2-6			Electrical classification:	none	
	9A.2-3	9A.2-7		Safety-related divisional equipment or cables: II			
	9A.2-4	9A.2-8		Nonsafety-related red	lundant trains or equipment or cables:	none	
	9A.2-5		Surround	ed by fire barriers rated a	t: 3 hours		
				Excep	t: elevator doors (1.5 hr rated)		
			-				
Consisting	of the following	ng Rooms:	Fire De	etection	Fire Suppress	ion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-6400	1221	Cable insulation	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks	
-1000	1321	Electrical equipment		(outside stairwell		at stairwells	
	1323	Cable insulation		at each landing)			
13570	1620	_					
17500	1721		_				
	1720	Cable insulation			ABC fire extinguishers		
	1722	Class IIIB lubricants					
	1723						
		< 1400	A	- 1)/1/			
		< 1400	Incipated combustible to	ad, MJ/III2	Assuming automatic & manual FP e	equipment does not	
		1400		e Ioad IIIIII, NJ/III2	function, impact of design basis fire	on sale shutdown.	
Assuming	operation of in	estallad fire extinguishing a	quinment impact of fire una	n	this Fine Area results in loss of an	lu anu capies within ly Sofoty Division II	
Assuming (lant operation	· None	quipment, impact of me upo	11.	aquinment, remaining three sefer	ty divisions and hath	
Radio	logical release	· None no radiological m	aterials present		redundant A and B aquinment ar	y unvisions and both	
Radio	L ife safety	Travel distance limits to	EXITS meet NFPA 101		are operable Automatic logic co	e unanecteu by me anu ntrol schome (anv two	
Manu	al firefighting	Access via stairwell and	interior doors		out of four redundant signals) ror	nains operable	
Ivianu	Property loss	Significant			fout of four redundant signals) ren	nams operable.	
	i toperty 1055	. Dismittant					

	Fire Area:	F1331	Description:	Division III Electrical		
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804	
	DCD Fig:			Bui	ilding code occupancy classification:	F-1
	9A.2-2	9A.2-6			Electrical classification:	none
	9A.2-3	9A.2- 7		Safety-re	lated divisional equipment or cables:	III
	9A.2-4	9A.2-8	Nonsafety-related redundant trains or equipment or cables: none			
	9A.2-5		Surround	ed by fire barriers rated at	3 hours	
				Except	elevator doors (1.5 hr rated)	
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-6400	1231	Cable insulation	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks
-1000	1331	Electrical equipment		(outside stairwell		at stairwells
13570	1630	Cable insulation		at each landing)		
17500	1731					
	1703	Cable insulation			ABC fire extinguishers	
	1730	Class IIIB lubricants				
	1732					
			1			
		< 1400	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP equipment does not	
		1400	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:	
					Complete burnout of all equipme	nt and cables within
Assuming o	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upo	n:	this Fire Area results in loss of on	ly Safety Division III
	lant operation:	None	equipment; remaining three safety division			ty divisions and both
Kadio	logical release:	None, no radiological ma	terials present redundant A and B equipment are unaffected			e unaffected by fire and
м	Life safety:	I ravel distance limits to	EXIIS meet NFPA 101		are operable. Automatic logic co	ntrol scheme (any two
Manu	al firefighting:	Access via stairwell and i	nterior doors		out of four redundant signals) rer	nains operable.
	Property loss:	Significant				

	Fire Area:	. F1341	Description:	Division IV Electrical		
l	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804	
l	DCD Fig:		_	Bu	uilding code occupancy classification:	F-1
l	9A.2-2	9A.2-6	1		Electrical classification:	none
l	9A.2-3	9A.2-7		Safety-re	elated divisional equipment or cables:	IV
l	9A.2-4	9A.2-8		Nonsafety-related red	undant trains or equipment or cables:	none
l	9A.2-5		Surround	ed by fire barriers rated at	t: 3 hours	
1			-	Except	t: none	
Cinting	Cil - f-llowie		Eiro D	· -4:	Eiro Supprogr	
Consisting	of the followin	ig Rooms:	- Primary	tection	File Suppless	101 Declarp
EL	KOOIII #	Potential Combustibles	Primary	Васкир	Primary	Васкир
(100	1241		· · · · · · · · · · · · · · · · · · ·	1		
-6400	1241	Cable insulation	Area-wide ionization	Manual pulls	CO2 fire extinguisners	Hose racks
-1000	1541	Electrical equipment	1	(outside stairweil	1	at stairweiis
13570	1040	Cable insulation	1	at each landing)	1	I
17500	1741	Citte immedian	4 !	1	ADC fine entinguishons	1
1	1701, 1742	Cable insulation		1	ABC fire extinguishers	I
1	1740	Class IIID IUUI Icanos		1	ADC fire extinguishers CO2 fire	1
1	1/40	Cable insulation	1	1	ADC III e extinguishers, CO2 III e	1
1		Close IIIR lubricants		1	CAUNguisnei 5	1
 	+		4	i	+ +	1
F		<u> </u>	<u>. </u>			
1		< 1400	Anticipated combustible lc	oad, MJ/m2	Assuming automatic & manual FP e	equipment does not
1		1400	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:	
1					Complete burnout of all equipmer	nt and cables within
Assuming	operation of in	stalled fire extinguishing ec	quipment, impact of fire upo	m:	this Fire Area results in loss of on	ly Safety Division IV
Р	Plant operation:	. None		1	equipment; remaining three safet	ty divisions and both
Radio	logical release:	None, no radiological ma	aterials present	1	redundant A and B equipment are	e unaffected by fire and
1	Life safety:	Travel distance limits to	EXITs meet NFPA 101		are operable. Automatic logic co [,]	ntrol scheme (any two
Manu	ual firefighting:	. Access via stairwell and	interior doors	1	out of four redundant signals) ren	nains operable.
1	Property loss:	Significant		1		
4						

	Fire Area:	F1450	Description:	Hydrogen Gas A			
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 24, 50A, 72, 101, 497, 804		
		DCD Fig:		Bui	ilding code occupancy classification:	F-1	
		9A.2-4	Electrical classification: Group B Class I Div II				
				Safety-rel	lated divisional equipment or cables:	none	
				Nonsafety-related redu	undant trains or equipment or cables:	Α	
			Surround	ed by fire barriers rated at:	3 hours		
				Except	basemat (non-rated)		
			-				
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	1450	Electrical equipment	Area-wide spot heat	Manual pull	ABC fire extinguisher	Hydrant	
		Cable insulation		(outside room)			
		16 m3 Hydrogen					
		-	•				
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	nt and cables within	
Assuming of	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upo	n:	this Fire Area affects only redund	lant train A equipment	
Р	lant operation:	None			and no safety-related equipment;	all safety divisions and	
Radiol	logical release:	None, no radiological ma	aterials present		redundant train B are operable.	Both A and B on-site	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		power sources are unaffected by	fire and are operable.	
Manu	al firefighting:	Access via door					
	Property loss:	Minor					

	Fire Area:	F1460	Description:	Hydrogen Gas B			
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 24, 50A, 72, 101, 497, 804		
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-4	Electrical classification: Group B Class I Div II				
				Safety-re	lated divisional equipment or cables:	none	
				Nonsafety-related redu	undant trains or equipment or cables:	В	
			Surround	ed by fire barriers rated at	3 hours		
				Except	basemat		
]				
Consisting	of the followir	ng Rooms.	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
				÷		Â	
4650	1460	Electrical equipment	Area-wide spot heat	Manual pull	ABC fire extinguisher	Hydrant	
		Cable insulation	_	(outside room)	_		
		16 m3 Hydrogen					
			7				
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	nt and cables within	
Assuming (operation of in	stalled fire extinguishing ec	uipment, impact of fire upo	n:	this Fire Area affects only redund	lant train B equipment	
Р	lant operation:	None			and no safety-related equipment;	all safety divisions and	
Radio	logical release:	None, no radiological ma	terials present redundant train A are operable. Both A and B on-site				
	Life safety:	Travel distance limits to	EXITs meet NFPA 101 power sources are unaffected by fire and are operable.				
Manu	al firefighting:	Access via door					
	Property loss:	Minor					

	Fire Area: F1600		Description: Refueling Floor and Common Access				
	Building:	Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 90A, 101, 80 4	4	
	DCD Fig:		_	Building	code occupancy classification:	F-1	
	9A.2-4	9A.2- 7			Electrical classification:	Electrical classification: none	
	9A.2-5	9A.2-8		Safety-related of	divisional equipment or cables:	none	
	9A.2-6	9A.2-9	N	lonsafety-related redundant	t trains or equipment or cables:	A, B	
			Surround	led by fire barriers rated at:	3 hours		
				Except:	driveway (non-rated); elevat	tor doors (1.5 hr rated)	
			•				
Consisting	of the following Ro	oms:	Fire De	etection	Fire Suppr	ression	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	1490	Transient combustibles	Area-wide linear heat	Manual pulls	Hose racks	ABC fire extinguishers	
13570	1600	Class IIIB lubricants		(outside stairwell	at stairwells		
		Electrical equipment		at each landing)			
		Cable insulation					
17500	17P3	None					
27000	18P0,18P1,18P2						
34000	1900	Transient combustibles	Area-wide ionization				
	1903	Electrical equipment					
	1904	Cable insulation					
	1905	Class A combustibles					
	1906	Filter media					
	above ceiling	Cable insulation					
	1905,1906						
	1901, 1902	None					
	1907, 1908						
			1				
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manua	al FP equipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design bas	sis fire on safe shutdown:	
					Complete burnout of all equ	ipment and cables	
Assuming of	operation of installed	d fire extinguishing equipm	ent, impact of fire upon:	I	within this Fire Area affects	only redundant train A	
_	Plant operation:	None; restoration requir	ed before refueling		and B equipment, but does r	not affect any safety-	
R	adiological release:	Contained within buildin	related equipment; all safety divisions are			divisions are	
Life safety: Travel distance limits to			EXITs meet NFPA 101		unaffected by a fire and are	operable. Both A and	
1	Manual firefighting:	Access via stairwells			B on-site power sources are	unaffected by fire and	
	Property loss:	Moderate			are operable.		

	Fire Area: F1770		Description:	Main Steam Tunnel		
	Building:	Reactor & Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804	
	DCD Fig:			Bui	lding code occupancy classification:	F-1
	9A.2-7	9A.2-13			Electrical classification:	none
	9A.2-8	9A.2-14		Safety-rel	lated divisional equipment or cables:	I, II, III, IV
		9A.2-15		Nonsafety-related redu	indant trains or equipment or cables:	none
9A.2-16			Surround	ed by fire barriers rated at:	3 hours	
				Except:	north side (water curtain sprinkle	ers in F4100)
			-			
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
8200	part of 4293	Class IIIB lubricants	Area-wide linear heat	Manual pulls	Hose racks	ABC fire extinguishers
		Cable insulation		(outside stairwell	at stairwells	at access doors
	4393			at each landing)		
1	4==0					
17500	1770					
		< 700	Anticipated combustible lo	ad MI/m?	Assuming automatic & manual FD	equipment does not
		700	Unsprinklered combustible	load limit MI/m?	Assuming automatic & manual FP equipment does not function impost of design basis fire on sofe shutdown	
		/00	Onsprinklered combustion	10dd 11111t, 1413/1112	Complete humant of all equipment and ashlas within	
Assuming	operation of in-	stalled fire extinguishing eq	uninment impact of fire upo	n.	this Fire Area results in loss of Di	vision I II III and IV
P	Plant operation.	Reactor scram: turbine t	rin:		containment isolation instrument	ation: containment
-	and operation.	outage required to restor	re.		isolation is maintained by inboard	d MSIV's outside of
Radio	logical release.	Contained within buildir	là Ià		this Fire Area No safe shutdown	functions are affected
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		by this fire: all other safety-relate	d equipment and both
Manu	al firefighting:	Access via interior doors			redundant train A and B equipme	ent are unaffected by
,	Property loss:	Moderate			the fire and are operable. See als	o section 9A.6.
	1 5					

Table 9A.5-2, Fuel Building

	Fire Area:	F2100	Description: New and Spent Fuel Handling			
	Buildings:	Fuel & Reactor	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 90A, 101, 804	
	DCD Fig:			Bu	ilding code occupancy classification:	F-1
	9A.2-1	9A.2-5			Electrical classification:	none
	9A.2-2	9A.2-6		Safety-re	lated divisional equipment or cables:	none
	9A.2-3	9A.2-7		Nonsafety-related red	undant trains or equipment or cables:	A, B
	9A.2-4	9A.2-8	Surround	ed by fire barriers rated at	3 hours	
				Except	basemat (non-rated); elevator do	ors (1.5 hr rated)
Consisting	of the following Roo	oms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-11500	2101	Class IIIB lubricants	Area-wide photoelectric	Manual pulls	Hose racks	ABC fire
	2100, 2150, 2160,	Cable insulation	Area-wide ionization	(outside stairwell	(in nearby stairwells)	extinguishers
	2151, 2161,			at each landing)		
	2102, 2190, 2191					
	21P0, 21P1, 21P2	None	Area-wide linear heat			
-6400	2200, 2201, 2202,	Class IIIB lubricants	Area-wide ionization			
	2251, 2261	Cable insulation				
-1000	2300, 2301, 2302	Electrical equipment				
4650	2400	Class IIIB lubricants	Area-wide linear heat			
		Cable insulation				
	2401	Transient combustibles	Area-wide ionization			
		Class A combustibles				
17500	1702	None				
			-			
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP e	equipment does not
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:	
					Complete burnout of all equipment	nt and cables within this
Assuming	operation of installed	l fire extinguishing equipme	ent, impact of fire upon:		Fire Area results in loss of only re	edundant train A and B
	Plant operation:	None; restoration requir	ed before refueling		equipment; all safety-related and	safe shutdown
I	Radiological release:	Contained within building	ıg		equipment is unaffected by fire an	nd are operable.
	Life safety:	Travel distance limits to	EXITs meet NFPA 101 Makeup water capability to the Spent Fuel Poo		pent Fuel Pool from the	
	Manual firefighting:	Access via stairwells	FP system is unaffected by fire and is operable. Bo			d is operable. Both A
	Property loss:	Moderate			and B on-site power sources are u	naffected by fire and
					are operable.	

	Fire Area:	. F2192	Description:	Description: Elevator A				
	Building:	. Fuel	Applicable codes:	IBC; Reg Guide 1.189; M	NFPA 10, 14, 72, 101, 804; ASME A	17.1		
		DCD Fig:	_	Bu	ilding code occupancy classification:	F-1		
		9A.2-1		Electrical classification: none				
		9A.2-2		Safety-re	lated divisional equipment or cables:	none		
1		9A.2-3		Nonsafety-related redu	undant trains or equipment or cables:	none		
1		9A.2-4	Surround	ed by fire barriers rated at	: 3 hours			
		9A.2-5		Except	: basemat (non-rated); elevator do	ors (1.5 hr rated)		
		·						
Consisting (of the followin	g Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
	1	1	T T		1			
-11500	2192	Class IIIB lubricants Cable insulation	Area-wide ionization	Manual pulls (outside Elev at each landing)	ABC fire extinguishers (outside Elev at each landing)	Hose racks (in nearby stairwell)		
9060	2500	Class IIIB lubricants Cable insulation Electrical equipment			CO2 fire extinguisher (outside room)			
Assuming o P Radio! Manu) peration of ins Plant operation: logical release: Life safety al firefighting: Property loss	700 700 700 talled fire extinguishing equation None None, no radiological matrix Travel distance limits to Access via stairwell and Negligible	Anticipated combustible los Unsprinklered combustible uipment, impact of fire upor aterials present EXITs meet NFPA 101 hoistway doors	pad, MJ/m2 > load limit, MJ/m2 1:	Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipment this Fire Area affects no safety-re equipment; all safety divisions an A and B are operable.	equipment does not e on safe shutdown: nt and cables within lated or safe shutdown d both redundant trains		

	Fire Area:	: F2193	Description:	Stairwell A			
	Building:	: Fuel	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 101, 804		
	DCD Fig:		_	Bui	lding code occupancy classification:	F-1	
	9A.2-1	9A.2-5		Electrical classification: none			
1	9A.2-2	9A.2-6		Safety-rel	ated divisional equipment or cables:	none	
 '	9A.2-3	9A.2-7		Nonsafety-related redu	indant trains or equipment or cables:	none	
1	9A.2-4	9A.2-8	Surround	ed by fire barriers rated at:	3 hours		
				Except:	basemat		
Consisting (of the followin	g Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-11500 -6400 -1000 4650 9060 22500	2193	None	Area-wide ionization	Manual pulls (outside stairwell at each landing)	Hose racks	ABC fire extinguishers	
Assuming o P Radio! Manu	operation of ins Plant operation: logical release: Life safety ual firefighting Property loss	negligible 700 stalled fire extinguishing equ None None, no radiological ma Travel distance limits to Access via exterior and i Negligible	Anticipated combustible log Unsprinklered combustible aipment, impact of fire upor uterials present EXITs meet NFPA 101 nterior doors	ad, MJ/m2 : load limit, MJ/m2 n:	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipment this Fire Area affects no safety-re equipment; all safety divisions an A and B are operable.	equipment does not on safe shutdown: nt and cables within lated or safe shutdown d both redundant trains	

Fire Area: F2490 Description: Stairwell B							
	Building:	Fuel	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804		
		DCD Fig:		Bu	ilding code occupancy classification:	F-1	
		9A.2-4	Electrical classification: none				
		9A.2-5	Safety-related divisional equipment or cables: none				
		9A.2-6		Nonsafety-related redu	undant trains or equipment or cables:	none	
		9A.2-7	Surround	ed by fire barriers rated at	3 hours		
		9A.2-8		Except	basemat		
Consisting of	of the following	g Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	2490	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
				(outside stairwell			
22500				at each landing)			
		negligihle	Anticipated combustible lo	ad MI/m?	Assuming automatic & manual FP α	equinment does not	
		700	Unsprinklered combustible	load limit MI/m?	Assuming automatic & manual FF equipment does not function import of design basis firs on safe shutdown:		
		/00	Chispinikiered combustion	load mint, wij/m2	Complete hurnout of all equipme	nt and cables within	
Assuming	neration of ins	talled fire extinguishing eq	unment impact of fire upor	n.	this Fire Area affects no safety-re	lated or safe shutdown	
P rosuming 0	lant operation:	None	urpment, impact of fife upor	1.	aquinment: all safety divisions an	d both redundant trains	
Radiol	ogical release:	None no radiological ma	terials present		A and B are operable	u both i cuundant trains	
ituatoi	Life safety:	Travel distance limits to	EXITs meet NFPA 101		r and b are operable.		
Manu	al firefighting:	Access via exterior door					
uitu	Property loss:	Negligible					
	roperty loss.	· · · 5·· 5·· · · ·		l	L		

	Fire Area:	F2600	Description: HVAC Penthouse A				
	Building:	Fuel	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 90A, 101, 804		
		DCD Fig:	-	Building code occupancy classification: F-1			
		9A.2-7	Electrical classification: none				
		9A.2-8		Safety-rel	ated divisional equipment or cables:	none	
				Nonsafety-related redu	indant trains or equipment or cables:	Α	
			Surround	led by fire barriers rated at:	3 hours		
				Except:	none		
1							
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
22500	2600	Class IIIB lubricants	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
		Cable insulation		(outside stairwells)	(in nearby stairwells)	~	
1		Filter media			· · · · ·		
	<u>.</u>		·				
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:	
					Complete burnout of all equipme	nt and cables within	
Assuming c	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upor	n:	this Fire Area results in loss of on	ly redundant train A;	
P	lant operation:	None; restoration requir	red before refueling		all safety-related or safe shutdow:	n and redundant train	
Radio	logical release:	None, no radiological ma	aterials present	rials present B equipment is unaffected by fire and are operable.			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101 Both A and B on-site power sources are unaffected b			ces are unaffected by	
Manual firefighting: Access via stairwells					fine and ano anonable	•	
Iviallu	iai mengnung.	ALLESS VIA STAIL WEILS		1	mre and are operable.		
Ivialit	Property loss:	Moderate			lire and are operable.		

Applicable codes: [IBC; Reg Guide 1.189; NFPA 10, 14, 72, 90A, 101, 804 DCD Fig: 9A.2-1 9A.2-5 9A.2-2 9A.2-6 9A.2-3 9A.2-7 9A.2-4 9A.2-8 Surrounded by fire barriers rated at: Jours Consisting of the following Rooms: Fire Detection Fire Detection Fire Suppression Primary Backup Primary Backup		Fire Area	: F2601	Description:	Description: HVAC Penthouse B				
DCD Fig: Building code occupancy classification: F-1 9A.2-1 9A.2-5 Safety-related divisional equipment or cables: Inone 9A.2-3 9A.2-7 Nonsafety-related divisional equipment or cables: Ba 9A.2-4 9A.2-8 Surrounded by fire barriers rated at: 3 hours Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potnial Combustibles Primary Backup -11500 2194 Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Anticipated combustible load, MJ/m2 700 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None, no radiological materials present Assuming automatic & manual FP equipment and cables with this Fire Area results in loss of only redundant train all safety-related or safe shutdown and redundant train and resofundant train Manual firefighting:		Building	: Fuel	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 90A, 101, 804			
9A.2-1 9A.2-5 Electrical classification: none 9A.2-2 9A.2-6 Safety-related divisional equipment or cables: none 9A.2-3 9A.2-7 Nonsafety-related redundant trains or equipment or cables: B 9A.2-4 9A.2-8 Surrounded by fire barriers rated at 3 hours Surrounded by fire barriers rated at B B Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup -11500 2194 Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Articipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: 700 Unsprinklered combustible load, MJ/m2 Assuming automatic & manual FP equipment and cables with this Fire Area results in loss of only redundant train all safety-related or safe shutdown: Plant operation: None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via stairwells Acces via stairwells		DCD Fig:		_	Bu	ilding code occupancy classification:	F-1		
9A.2-2 9A.2-6 Safety-related divisional equipment or cables: none 9A.2-3 9A.2-7 Nonsafety-related redundant trains or equipment or cables: B 9A.2-4 9A.2-8 Surrounded by fire barriers rated at: Bours Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup -11500 2194 Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: 700 Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment and cables withit this Fire Area results in loss of only redundant train all safety-related or safe shutdown and redundant train and are operable.		9A.2-1	9A.2-5]		Electrical classification:	none		
9A.2-3 9A.2-7 Nonsafety-related redundant trains or equipment or cables: B 9A.2-4 9A.2-8 Surrounded by fire barriers rated at: 3 hours Image: basemat (non-rated) Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup Primary Backup -11500 2194 Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 700 Unsprinklered combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Complete burnout of all equipment and cables withit this Fire Area results in loss of only redundant train all safety-related or safe shutdown and redundant train all safety-related by fire and are operable. Travel distance limits to EXITs meet NFPA 101 Both A and B on-site power sources are u		9A.2-2	9A.2-6	Safety-related divisional equipment or cables: none					
9A.2-4 9A.2-8 Surrounded by fire barriers rated at: Except: 3 hours basemat (non-rated) Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup -11500 2194 Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui Filter media Unsprinklered combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Complete burnout of all equipment and cables withi this Fire Area results in loss of only redundant train all safety-related or safe shutdown and redundant train all safety-related or safe shutdown and redundant tr A equipment is unaffected by fire and are operable. Property loss: Moderate Noderate Both A and B on-site power sources are unaffected to fire and are operable.		9A.2-3	9A.2-7	Nonsafety-related redundant trains or equipment or cables: B					
Except: basemat (non-rated) Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup Primary Backup		9A.2-4	9A.2-8	Surround	led by fire barriers rated a	t: 3 hours			
Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup -11500 2194 Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Filter media Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Filter media Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: Life safety: Life safety: Manual firefighting. Property loss: Moderate None, no radiological materials present Complete burnout of all equipment and cables withi this Fire Area results in loss of only redundant train all safety-related or safe shutdown and redundant tr A equipment is unaffected by fire and are operable. Both A and B on-site power sources are unaffected by fire and are operable.					Except: basemat (non-rated)				
EL Room # Potential Combustibles Primary Backup Primary Backup -11500 2194 Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: 700 Unsprinklered combustible load limit, MJ/m2 Assuming automatic & manual FP equipment and cables withi this Fire Area results in loss of only redundant train all safety-related or safe shutdown and redundant tr A equipment is unaffected by fire and are operable. Property loss: Moderate Both A and B on-site power sources are unaffected by fire and are operable.	Consisting (of the followin	g Rooms:	Fire De	etection	Fire Suppress	sion		
-11500 2194 Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Filter media Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Filter media Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: 700 Unsprinklered combustible load limit, MJ/m2 Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None; restoration required before refueling Radiological release: Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Property loss: None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Property loss: Access via stairwells Moderate NFPA 101 Moderate	EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-11500 2194 Cable insulation Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui 22500 2601 Class IIIB lubricants Cable insulation Filter media Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extingui Filter media Filter media Anticipated combustible load, MJ/m2 Unsprinklered combustible load limit, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: Life safety: Manual firefighting: Property loss: None; restoration required before refueling None; no radiological materials present Complete burnout of all equipment and cables withit this Fire Area results in loss of only redundant trian all safety-related or safe shutdown and redundant tri A equipment is unaffected by fire and are operable. Manual firefighting: Property loss: Moderate Moderate Statistic equipment									
22500 2601 Class IIIB lubricants Cable insulation Filter media (outside stairwell at each landing) Filter media (outside stairwell at each landing) (outside stairwell at each landing) Filter media (outside stairwell at each landing) (outside stairwell at each landing) Class IIIB lubricants Cable insulation Filter media (outside stairwell at each landing) (outside stairwell at each landing) Subrematical conductive Tool Anticipated combustible load, MJ/m2 Unsprinklered combustible load limit, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: Life safety: None, no radiological materials present Life safety: Complete burnout of all equipment and cables withi this Fire Area results in loss of only redundant train all safety-related or safe shutdown and redundant train all safety-related or safe shutdown and redundant train all safety-related by fire and are operable. Both A and B on-site power sources are unaffected to fire and are operable.	-11500	2194	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers		
Cable insulation at each landing) Filter media at each landing) Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Complete burnout of all equipment and cables withit this Fire Area results in loss of only redundant train all safety-related or safe shutdown and redundant train all safety-related or safe shutdown and redundant train all safety-related or safe shutdown and redundant train all safety-related by fire and are operable. Differentiation: None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via stairwells Property loss: Moderate	22500	2601	Class IIIB lubricants		(outside stairwell				
Filter media Sector Filter media Image: Sector Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Too Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None; restoration required before refueling None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via stairwells Property loss: Moderate			Cable insulation		at each landing)				
< 700		<u> </u>	Filter media						
< 700Anticipated combustible load, MJ/m2Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown:Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: Radiological release: Life safety: Life safety: Manual firefighting: Property loss:Anticipated combustible load, MJ/m2Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown:Complete burnout of all equipment and cables withi this Fire Area results in loss of only redundant train all safety-related or safe shutdown and redundant tr A equipment is unaffected by fire and are operable. Both A and B on-site power sources are unaffected by fire and are operable.									
< 700			< 700	1.			· · · · ·		
700 JUnsprinklered combustible load limit, MJ/m2 Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None; restoration required before refueling Complete burnout of all equipment and cables within this Fire Area results in loss of only redundant train all safety-related or safe shutdown and redundant train all safety-related by fire and are operable. Manual firefighting: Access via stairwells Property loss: Moderate			< 700	Anticipated combustible io	bad, $MJ/m2$	Assuming automatic & manual FP	equipment does not		
Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: Radiological release: Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Property loss: Moderate Moderate			700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	on safe shutdown:		
Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: Radiological release: Life safety: Manual firefighting: Property loss: Moderate Manual firefighting: Property loss: Manual firefighting: Property loss: Property loss: Pro			· 11 1 C · · · 1 ·	· · · · · · · · · · · · · · · · · · ·		Complete burnout of all equipme	nt and cables within		
Plant operation: None; restoration required before retueing all safety-related or safe shutdown and redundant to Radiological release: None, no radiological materials present A equipment is unaffected by fire and are operable. Life safety: Travel distance limits to EXITs meet NFPA 101 Both A and B on-site power sources are unaffected by Manual firefighting: Access via stairwells fire and are operable. Property loss: Moderate	Assuming o	peration of ins	stalled fire extinguishing equ	uipment, impact of fire upor	n: I	this Fire Area results in loss of on	ly redundant train B;		
Radiological release: None, no radiological materials present A equipment is unaffected by fire and are operable. Life safety: Travel distance limits to EXITs meet NFPA 101 Both A and B on-site power sources are unaffected by fire and are operable. Manual firefighting: Access via stairwells fire and are operable. Property loss: Moderate		lant operation:	None; restoration requir	ed before retueling		all safety-related or safe shutdow	n and redundant train		
Life safety: Iravel distance limits to EXITs meet NFPA 101 Both A and B on-site power sources are unaffected I Manual firefighting: Access via stairwells fire and are operable. Property loss: Moderate	Radioi	logical release:	None, no radiological ma	A equipment is unaffected by fire and are operable.			and are operable.		
Manual firefighting: Access via stairwells Property loss: Moderate	м	Life safety	Travel distance limits to	EXITS meet NFPA 101		Both A and B on-site power source	es are unaffected by		
Property loss: Moderate	Manu	al firefighting:	Access via stairwells			fire and are operable.			
		Property loss	: Moderate						

Table 9A.5-3, Control Building

	Fire Area:	F3100	Description:	Corridor A				
	Building:	Control	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 90A, 101, 804			
		DCD Fig:		Bui	lding code occupancy classification:	F-1		
		9A.2-2	Electrical classification: none					
		9A.2-3		Safety-related divisional equipment or cables: none				
		9A.2-4		Nonsafety-related redu	Indant trains or equipment or cables:	none		
		9A.2-5	Surround	ed by fire barriers rated at	3 hours			
				Except	: basemat (non-rated); elevator do	oors (1.5 hr rated)		
			·					
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-7400	3100	Cable insulation	Area-wide photoelectric	Manual pulls	Hose racks	ABC fire extinguishers		
	over sump	Class A combustibles		(at EXITs)	(in nearby stairwells)			
	3100		Area-wide ionization					
-2000	3200							
	3203							
4650	3300							
								
			1					
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on sate shutdown:		
		. 11 1 (*	· · · · · · · · · · · · · · · · · · ·		Complete burnout of all equipme	nt and cables within		
Assuming o	operation of ins	stalled fire extinguishing ec	uipment, impact of fire upo	n:	this Fire Area affects no safety-re	lated or safe shutdown		
Г. D. 1. 1	lant operation:	None	· · · · · · · · · · · · · · · · · · ·		equipment; all safety divisions an	d both redundant		
Kadioi	ogical release.	None, no radiological ma	EVITS most NEDA 101		trains A and B are operable.			
Monu	Life safety:	I ravel distance limits to	EXITS meet NFPA 101					
Ivianu	al nrengnung.	Access via doors						
	Property loss.	Negligible						

	Fire Area:	F3101	Description:	Corridor B		
	Building:	Control	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 90A, 101, 804	
		DCD Fig:		Bu	ilding code occupancy classification:	F-1
		9A.2-2	7		Electrical classification:	none
		9A.2-3		Safety-re	lated divisional equipment or cables:	none
		9A.2-4		Nonsafety-related redu	undant trains or equipment or cables:	none
		9A.2-5	Surrounde	ed by fire barriers rated at	t: 3 hours	
				Except	t: basemat (non-rated); elevator de	oors (1.5 hr rated)
<u> </u>			-			
Consisting	of the followin	ng Rooms:	Fire De	etection	Fire Suppres	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-7400	3101	Cable insulation	Area-wide photoelectric	Manual pulls	Hose racks	ABC fire extinguishers
	over sump	Class A combustibles		(at EXITs)	(in nearby stairwells)	
-2000	rest of 3101		Area-wide ionization			
			-			
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not
		700	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fir	e on safe shutdown:
					Complete burnout of all equipme	ent and cables within
Assuming	operation of ins	stalled fire extinguishing en	quipment, impact of fire upor	n:	this Fire Area affects no safety-re	elated or safe shutdown
P	Plant operation:	None			equipment; all safety divisions an	ıd both redundant
Radio	logical release:	None, no radiological ma	aterials present		trains A and B are operable.	
Life safety: Travel distance limits to			EXITs meet NFPA 101			
Manu	ual firefighting:	Access via doors				
	Property loss:	Negligible				
4						

	Fire Area	: F3110	Description:	Division I Electrica	1		
	Building	: Control	Applicable codes:	IBC; Reg Guide 1.1	189; NFPA 10, 14, 72, 75, 90A, 101,	804	
	-	DCD Fig:		Bui	lding code occupancy classification:	F-1	
		9A.2-2			Electrical classification:	none	
		9A.2-3		Safety-rel	lated divisional equipment or cables:	I	
		9A.2-4	N	Nonsafety-related redu	indant trains or equipment or cables:	Α	
		9A.2-5	Surrounded by	y fire barriers rated at	3 hours		
Exce					basemat (non-rated)		
Consisting	of the following	ng Rooms:	Fire Dete	ction	Fire Sup	pression	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-7400	duct bank	Cable insulation	None	None	None	None	
	3110		Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks	
	below floor			(outside stairwell		(in nearby stairwells)	
-6800	3250			at each landing)			
	3110	Cable insulation					
		Electrical equipment					
	3251	None			Hose racks	ABC fire	
9060	3401	Class IIIB lubricants			(in nearby stairwells)	extinguishers	
	3404	Cable insulation					
	3406	Filter media		-			
	Charcoal	Charcoal	HVAC temperature		Internal manual spray		
	Filter		indication				
			7				
< 700 a	nt EL 9060; <	1400 EL -6800 & below	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not	
700 a	t EL 9060; 14	00 EL -6800 & below	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:	
		. 11 1 6 1 .			The nonsafety-related MCR HVA	C has redundant air handling	
Assuming	operation of in	stalled fire extinguishing eq	upment, impact of fire upo	on: T	units, but uses common ductwork	. Where the common ductwork	
D a J	lagical relation	None no vodialacias	torials nuccost	4	for one air handling unit could be	exposed to fire involving the	
Kadio	life action	Thone, no radiological ma	EVITS most NEDA 101	4	other redundant air handling uni	t, the HVAC ductwork will be	
Morris	Life safety	A cases via stainwalla	EALLS MEET NFPA 101	4	wrapped or encapsulated in 3-hou	ir fire rated material.Complete	
Iviant	Droperty loss	Significant		burnout of all equipment and cab	les within this Fire Area results		
	Floperty loss	. significant		in loss of only Division I safe shutdown equipment circuits, as well			
				as redundant train A non-safety equipment; remaining three			
					divisions of safe shutdown and redundant train B equipment are		
					unaffected by fire and are operab	ie. Automatic logic control	
					scheme (any two out of four redu	ndant signals) remains operable.	

	Fire Area:	F3120	Description:	Description: Division II Electrical				
	Building:	Control	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 75, 101, 804			
		DCD Fig:		Bui	lding code occupancy classification:	F-1		
		9A.2-2		Electrical classification: none				
		9A.2-3		Safety-rel	ated divisional equipment or cables:	II		
				Nonsafety-related redu	indant trains or equipment or cables:	none		
			Surround	Surrounded by fire barriers rated at: 3 hours				
				Except	basemat (non-rated)			
			-					
Consisting	of the followin	g Rooms:	Fire De	tection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-7400	duct bank	Cable insulation	None	None	None	None		
	3120		Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks		
	below floor			(outside stairwell		(in nearby stairwells)		
-6800	3120	Cable insulation		at each landing)				
		Electrical equipment						
			_					
		< 1400	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		1400	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
					Complete burnout of all equipme	nt and cables within		
Assuming	operation of ins	stalled fire extinguishing e	quipment, impact of fire upor	n:	this Fire Area results in loss of or	ly Division II safe		
F	Plant operation:	None			shutdown equipment circuits; re	maining three divisions		
Radio	logical release:	None, no radiological m	aterials present		of safe shutdown and redundant	trains A and B		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101	EXITs meet NFPA 101 equipment are unaffected by fire and are oper				
Manı	ual firefighting:	Access via stairwells			Automatic logic control scheme (any two out of four		
	Property loss:	Significant			redundant signals) remains opera	able.		

	Fire Area:	F3130	Description:	Division III Electric	cal	
	Building:	Control	Applicable codes:	IBC; Reg Guide 1.1	89; NFPA 10, 14, 72, 75, 90A, 101, 804	
	-	DCD Fig:			Building code occupancy classification:	F-1
		9A.2-2			Electrical classification:	none
		9A.2-3	Safety-related divisional equipment or cables: III			
		9A.2-4	Nonsafety-related redundant trains or equipment or cables: B			В
		9A.2-5	Surrounded by	y fire barriers rated at:	3 hours	
				Except:	basemat (non-rated)	
Consisting	of the followin	g Rooms:	Fire Dete	ction	Fire Suppression	n
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-7400	duct bank	Cable insulation	None	None	None	None
	3130		Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks
	below floor			(outside stairwell		(in nearby stairwells)
-6800	3260			at each landing)		
	3130	Cable insulation				
		Electrical equipment				
	3261	Insulation			Hose racks	ABC fire
9060	3402	Class IIIB lubricants			(in nearby stairwells)	extinguishers
	3403	Cable insulation				
	3407	Filter media		-		
	Charcoal	Charcoal	HVAC temperature		Internal manual spray	
	Filter		indication			
			1			
< 700 a	t EL 9060; < 1	400 EL -6800 & below	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP equipm	ient does not
/00 at	tel 9060; 14	00 EL -0800 & Delow	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on sa	te shutdown:
Accumina	anaration of in	stallad fire autinguishing ag	winnant impact of fire una		I ne nonsatety-related MCR HVAC has	redundant air nandling
Assuming	Operation of the	Nono	ulpinent, impact of fife upo		units, but uses common ductwork. who	ere the common ductwork
Radio	logical release	None no radiological ma	tarials present	-	for one air nandling unit could be exposed	ted to fire involving the
Raulo	I ife safety:	Travel distance limits to	FVITs most NFPA 101	-	other redundant air handling unit, the l	avad meterial Complete
Manu	al firefighting:	Access via stairwalls		-	wrapped or encapsulated in 5-hour life	rated material. Complete
Property loss: Significant				-	in loss of only Division III sofe shutdow	nin tills Fire Area results
Toporty 1055. Orginiteant				1	In loss of only Division III sale shutdow	n equipment circuits, as
					well as redundant train B non-salety eq	upment; remaining three
					uivisions of sale snutdown and redunda	nt train A equipment are
					unaffected by fire and are operable. At	nomatic logic control
					scheme (any two out of four redundant	signais) remains operable.

	Fire Area:	F3140	Description:	Description: Division VI Electrical				
	Building:	. Control	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 75, 101, 804			
		DCD Fig:	_	Bui	Iding code occupancy classification:	F-1		
		9A.2-2]	Electrical classification: none				
		9A.2-3		Safety-rel	lated divisional equipment or cables:	IV		
		9A.2-4		Nonsafety-related redu	indant trains or equipment or cables:	none		
		9A.2-5	Surround	led by fire barriers rated at	: 3 hours			
				Except	: basemat (non-rated)			
Consisting	, of the followir	ig Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
	Τ				T			
-7400	duct bank	Cable insulation	None	None	None	None		
-7400	3140	1	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks		
	below floor			(outside stairwell	-	(in nearby stairwells)		
-6800	3140	Cable insulation	1 '	at each landing)		、 -		
		Electrical equipment						
4650	3301	Cable insulation	1 '					
	below floor							
5250	3301	Cable insulation	1 '					
		Electrical equipment						
		< 1400	Anticipated combustible lc	oad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		1400	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
					Complete burnout of all equipme	ent and cables within		
Assuming	operation of ins	stalled fire extinguishing ec	quipment, impact of fire upo	on:	this Fire Area results in loss of or	nly Division IV safe		
F	Plant operation:	None			shutdown equipment circuits; re	maining three divisions		
Radio	ological release:	None, no radiological ma	aterials present		of safe shutdown and redundant	trains A and B		
	Life safety:	. Travel distance limits to	EXITs meet NFPA 101		equipment are unaffected by fire	and are operable.		
Manı	ual firefighting:	Access via stairwells			Automatic logic control scheme (any two out of four		
	Property loss:	. Significant			redundant signals) remains oper:	able.		
	÷ •			,				

	Fire Area:	F3190	Description:	Stairwell A		
	Building:	Control	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804	
		DCD Fig:		Bui	lding code occupancy classification:	F-1
		9A.2-2			Electrical classification:	none
		9A.2-3		Safety-rel	ated divisional equipment or cables:	none
		9A.2-4		Nonsafety-related redu	ndant trains or equipment or cables:	none
		9A.2-5	Surround	ed by fire barriers rated at:	3 hours	
				Except:	basemat (non-rated)	
			-			
Consisting	of the followin	ng Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-7400	3190	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers
-2000				(outside stairwell		
4650				at each landing)		
9060						
	<u> </u>					
		r	٦			
		negligible	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:	
					Complete burnout of all equipme	nt and cables within
Assuming o	peration of ins	stalled fire extinguishing ec	uipment, impact of fire upo	n:	this Fire Area affects no safety-re	elated or safe shutdown
P	lant operation:	None			equipment; all safety divisions an	id both redundant
Radiol	ogical release:	None, no radiological ma	nterials present		trains A and B are operable.	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101			
Manua	al firefighting:	Access via exterior and i	nterior doors			
	Property loss:	Negligible				

	Fire Area: F3191 Description: Elevator A					
	Building:	Control	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804; ASME A	17.1
		DCD Fig:	_	Bui	ilding code occupancy classification:	F-1
		9A.2-2	1		Electrical classification:	none
		9A.2-3		Safety-rel	lated divisional equipment or cables:	none
		9A.2-4		Nonsafety-related redu	undant trains or equipment or cables:	none
		9A.2-5	Surround	ed by fire barriers rated at	a hours	
				Except	:: basemat (non-rated); elevator do	oors (1.5 hr rated)
Consisting	of the followir	ng Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-7400	3191	Class IIIB lubricants Cable insulation	Area-wide ionization	Manual pulls (outside Elev at each landing)	ABC fire extinguishers (outside Elev at each landing)	Hose racks (in nearby stairwell)
9060	3405	Class IIIB lubricants Cable insulation Electrical equipment			CO2 fire extinguisher (outside room)	
					<u> </u>	
		< 700 700	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:
Assuming o P Radiol Manu	operation of ins lant operation: logical release: Life safety: al firefighting:	stalled fire extinguishing ec None None, no radiological ma Travel distance limits to Access via stairwells and	uipment, impact of fire upo aterials present EXITs meet NFPA 101 I hoistway doors	n:	Complete burnout of all equipme this Fire Area affects no safety-re equipment; all safety divisions an trains A and B are operable.	nt and cables within lated or safe shutdown d both redundant
	Property loss:	Negligible		1		

	Fire Area:	F3192	Description:	Stairwell B			
	Building:	Control	Applicable codes:	IBC; Reg Guide 1.189; I	NFPA 10, 14, 72, 101, 804		
		DCD Fig:	_	Bui	ilding code occupancy classification:	F-1	
		9A.2-2			Electrical classification:	none	
		9A.2-3		Safety-re	lated divisional equipment or cables:	none	
		9A.2-4		Nonsafety-related redu	undant trains or equipment or cables:	none	
		9A.2-5	Surround	ed by fire barriers rated at	: 3 hours		
				Except	:: basemat (non-rated)		
Consisting	of the followin	ng Rooms:	Fire De	etection	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-7400	3192	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
-2000				(outside stairwell			
4650				at each landing)			
9060							
		negligible	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	ent and cables within	
Assuming c	peration of ins	stalled fire extinguishing ec	uipment, impact of fire upo	n:	this Fire Area affects no safety-re	elated or safe shutdown	
P	lant operation:	None			equipment; all safety divisions ar	nd both redundant	
Radiological release: None, no radiological materials present				trains A and B are operable.			
Life safety: Travel distance limits to EXITs meet NFPA 101							
Manu	al firefighting:	Access via exterior and i	nterior doors				
	Property loss:	Negligible					
				-			

	Fire Area:	F3270	Description:	Main Control Roon	n Complex	
	Building:	Control	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 75, 101, 804			
		DCD Fig:	Building code occupancy classification: B			
		9A.2-3			Electrical classification:	none
		9A.2-4		Safety-rel	ated divisional equipment or cables:	none
			Ν	Nonsafety-related redu	ndant trains or equipment or cables:	none
			Surrounded by	y fire barriers rated at:	3 hours	
			interior	r fire barriers rated at:	1 hour, around room 3275 Main	Control Room
			_			
Consisting	of the followin	ig Rooms:	Fire Detection	on	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-2000	below	Cable insulation	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks
	access floor			(outside stairwells		(in nearby stairwells)
	3274	Cable insulation		at each landing)		
	3276	Class A combustibles				
-1400	3275	Cable insulation				
	3270	Electrical equipment			Hose racks	ABC fire
	3271	Class A combustibles			(in nearby stairwells)	extinguishers
	3273	Filter media				
	3274	Class IIIA lubricants				
	3204, 3205					
	3201, 3202	Class A combustibles	Area-wide photoelectric	-		
	above ceiling	Insulation	Area-wide ionization			
		< 1400	Anticipated combustible load, N	/J/m2	Assuming automatic & manual FP	equipment does not
		1400	Unsprinklered combustible load	l limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:
					Complete burnout of all equipme	nt and cables within
Assuming o	operation of in	stalled fire extinguishing eq	uipment, impact of fire upon:	1	this Fire Area affects MCR contr	ol of all four divisions
	lant operation:	Reactor scram; turbine t	rip; outage required to restore	-	of safe shutdown equipment. Op	erators manually scram
Radio	logical release:	None, no radiological ma	terials present	-	reactor before evacuating MCR.	Reactor and safe
м	Life safety:	I ravel distance limits to	EXIIS meet NFPA 101	-	shutdown control transferred to	either Remote
Manual firefighting: Access via stairwells			-	Shutdown Panel (located in separ	ate fire areas F1313	
	Property loss:	Significant		1	and F1323). All safety-related cir	cuits and train A and B
					redundant circuits are optically is	solated outside this fire
					area, so all safety divisional equip	ment both redundant
					trains A and B are operable. See	also section 9A.6.

	Fire Area:	F3302	Description: Non-1E Electrical				
	Building:	Control	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 75, 101, 804		
		DCD Fig:	_	Buil	lding code occupancy classification:	F-1	
		9A.2-4	1		Electrical classification:	none	
		9A.2-5		Safety-rela	ated divisional equipment or cables:	none	
				Nonsafety-related redu	ndant trains or equipment or cables:	none	
			Surround	led by fire barriers rated at:	3 hours		
1				Except:	none		
l			<u> </u>				
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	3302 below	Cable insulation	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks	
	access floor			(outside stairwell		(in nearby stairwells)	
5250	3302	Electrical equipment	1	at each landing)			
		Cable insulation					
	Ι						
			 ¬				
		< 1400	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		1400	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	nt and cables within	
Assuming	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upo	n:	this Fire Area affects no safety-re	elated or safe shutdown	
F	Plant operation:	None	!		equipment; all safety divisions an	d both redundant	
Radiological release: None, no radiological materials present				trains A and B are operable.			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101				
Manu	ual firefighting:	Access via stairwells					
	Property loss:	Significant	!				

Table 9A5-4, Turbine Building

	Fire Area:	F4100	Description: Turbine Equipment						
	Building:	Turbine	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 12, 13, 14, 15, 72, 90A, 497, 101, 804						
		DCD Fig:		Building code occupancy classification: F-1					
		9A.2-12	Electrical classification: none						
		9A.2-13		Safety-rel	ated divisional equipment or cables:	I, II, III, IV			
		9A.2-14		Nonsafety-related redu	ndant trains or equipment or cables:	none			
		9A.2-15	Surround	ed by fire barriers rated at:	3 hours				
		9A.2-16	Except:	basemat (non-rated); ele	evator doors (1.5 hr rated); exteri	or underground			
		9A.2-17		walls (non-rated); exteri	or walls above EL 12000 (non-rate	ed)			
a i i			F '. D		F. G				
Consisting	of the following Rooms:	Detential Combustil-1	Fire De	Dealur	Fire Suppressi	011 Dealum			
EL	Room #	Potential Combustibles	Primary	Васкир	Primary	Васкир			
-1400	4180, 4181, 4182	Class IIIB lubricants	Area-wide photoelectric	Manual nulls	ABC fire extinguishers	Hose racks			
1100	41F1A.41F1B.41F1C.	Cable insulation	Area-wide ionization	(outside stairwell	The fire exanguishers	(in nearby			
	41F1D.41F1E.41F1F.	Cubic insulation	The while follization	at each landing)		stairwells)			
	41F1G, 41F0, 41F3,			at each fanding)		stan wensy			
	41F4, 41F5, 41F6,								
	41F7, 41F8, 41F9								
	4100, 4101, 4102	Class IIIB lubricants							
		Cable insulation							
	4105, 4107, 4199	Filter media							
	4106, 4184	Class IIIB lubricants	Suppression flowswitch		Wet-pipe sprinkler				
	4185, 4186	Cable insulation	TT TT		16.3 L/min per m2				
4650	4205, 4206, 4207				over most remote 465 m2				
	4202, 4203								
	4281, 4282,	< 28 m3 Hydrogen	Area-wide spot heat		ABC fire extinguishers				
		Class IIIB lubricants			_				
	4201, 4204, 4280,	Class IIIB lubricants	Area-wide ionization						
	4284, 4290, 4291,	Cable insulation							
	42F1A,42F1B,42F1C,								
	42F1D,42F1E,42F1F,								
	42F1G, 42F1H, 4283,								
	42F2A,42F2B,42F2C,								
	42F2D,42F2E,42F2F,								
	42F2G, 42F2H,								
	42F4, 4295								

	Fire Area:	F4100 (continued)	Description: Turbine Equipment (continued)				
	Building:	Turbine	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 12, 13, 14, 15, 72, 90A, 497, 101, 804				
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-12			Electrical classification:	none	
		9A.2-13		Safety-rel	ated divisional equipment or cables:	I, II, III, IV	
		9A.2-14		Nonsafety-related redu	ndant trains or equipment or cables:	none	
		9A.2-15	Surround	ed by fire barriers rated at:	3 hours		
		9A.2-16	Except:	basemat (non-rated); ele	evator doors (1.5 hr rated); exteri	or underground	
		9A.2-17		walls (non-rated); exteri	or walls above EL 12000 (non-rate	ed)	
			-				
Consisting	of the following Rooms:		Fire De	etection	Fire Suppressi	on	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	4200, 4294	Electrical equipment	Suppression flowswitch	Manual pulls	Dry-pipe sprinkler	Hose racks	
		Cable insulation		(outside stairwell	8.1 L/min per m2	(in nearby	
		Class IIIB lubricants		at each landing)	over most remote 181 m2	stairwells)	
		Transient combustibles					
7650	42F0	Class IIIB lubricants	Area-wide ionization		ABC fire extinguishers		
		Cable insulation					
8200	4293						
	4293 (end of tunnel)		Suppression flowswitch		Dry-pilot deluge		
					37.2 L/min per meter		
					(water curtain)		
12000	4300, 4301, 4302,	Class IIIB lubricants	Area-wide ionization		ABC fire extinguishers		
	4303, 4304, 4305,	Cable insulation					
	4306, 4309, 4383,	Filter media					
	4387, 4394						
1(000	4380, 4381, 4382	Cable insulation	Suppression flowswitch		wet-pipe sprinkler		
16000	4391, 4392	Class IIIB lubricants			16.3 L/min per m2		
23500	4200	4			over most remote 465 m2		
20000	4390 4405						
	4405 curbed area						
	rest of 4405	Class IIIB lubricants	Area-wide ionization		ABC fire extinguisners		
	4400, 4401, 4402	Cable insulation					
	4403, 4404	Filter media					

	Fire Area:	F4100 (continued)	Description:	Description: Turbine Equipment (continued)			
	Building:	Turbine	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 12, 13, 14, 15, 72, 90A, 497, 101, 804				
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-12]		Electrical classification:	none	
		9A.2-13		Safety-rela	ated divisional equipment or cables:	I, II, III, IV	
		9A.2-14		Nonsafety-related redu	ndant trains or equipment or cables:	none	
		9A.2-15	Surround	ed by fire barriers rated at:	3 hours		
		9A.2-16	Except:	basemat (non-rated); ele	vator doors (1.5 hr rated); exteri	or underground	
		9A.2-17		walls (non-rated); exteri	or walls above EL 12000 (non-rate	ed)	
Consisting of	of the following Rooms:		Fire De	etection	Fire Suppressi	on	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
20000	H2 seal oil unit	Class IIIB lubricants	Suppression flowswitch	Manual pulls	Dry-pilot deluge	Hose racks	
		<11,000 L Class IIIA		(outside stairwells	12.2 L/min per m2	(in nearby	
		seal oil		at each landing)		stairwells)	
28000	4580 above ceiling	Cable insulation	Area-wide ionization		ABC fire extinguishers		
	4500, 4501, 4502	Class IIIB lubricants					
	4503, 4504, 4580	Cable insulation					
	4581, 4582, 4583	Filter media					
	4505, 4508, 4509		Area-wide linear heat				
	4506, 4507		Area-wide spot heat				
	Turbine-generator	Class IIIB lubricants	Spot heat over each		Automatic preaction spray		
	bearings		bearing		16.3 L/min per m2		
					over entire area		
	Generator housing	< 56 m3 Hydrogen	Process indication		Manual low pressure CO2	CO2 fire	
	Exciter housing		Area-wide ionization		30% concentration	extinguishers	
	Exciter nousing				two-shot volume		
33000	4600, 4602	Class IIIB lubricants	Area-wide ionization		ABC fire extinguishers	Hose racks	
		Cable insulation				(in nearby	
43500	4505	Filter media				stairwells)	
54000							

Table 9A5-4, Turbine Building (Cont

Fire Area: F4100 (continued)	Description: Turbine Equipme	ent (continued)
Building: Turbine	Applicable codes: IBC; Reg Guide 1	1.189; NFPA 10, 12, 13, 14, 15, 72, 90A, 497, 101, 804
DCD Fig:		Building code occupancy classification: F-1
9A.2-12		Electrical classification: none
9A.2-13	Sa	afety-related divisional equipment or cables: I, II, III, IV
9A.2-14	Nonsafety-rela	ted redundant trains or equipment or cables: none
9A.2-15	Surrounded by fire barriers	rated at: 3 hours
9A.2-16	Except: basemat (non-rat	ed); elevator doors (1.5 hr rated); exterior underground
9A.2-17	walls (non-rated):	; exterior walls above EL 12000 (non-rated)
	7	
> 700 in rooms where turbine oil can flow	V	
< 700 in all other rooms	s Anticipated combustible load, MJ/m2	Assuming automatic & manual FP equipment does not
700	Unsprinklered combustible load limit, MJ/m2	function, impact of design basis fire on safe shutdown:
		Complete burnout of all equipment and cables within
Assuming operation of installed fire extinguishing equipment, in	mpact of fire upon:	this Fire Area affects no safety-related or safe
Plant operation: Turbine trip; restoration	n required prior to restart	shutdown divisional equipment; all safety divisions
Radiological release: Contained within building	ng	and both redundant trains A and B are operable. Fire
Life safety: Travel distance limits to	EXITs meet NFPA 101	related failure of safety-related instrumentaion may
Manual firefighting: Access via stairwells		cause reactor scram or containment isolation. See
Property loss: Significant		Sections 9A.6.4.1 and 9A.6.4.2.

Fire Area: F4103			Description:	Feedwater Pumps				
	Building	: Turbine	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 13, 14, 72, 101, 804				
		DCD Fig:	Building code occupancy classification: F-1					
		9A.2-12			Electrical classification:	none		
		9A.2-13		Safety-rel	ated divisional equipment or cables:	none		
		9A.2-14		Nonsafety-related redu	indant trains or equipment or cables:	A, B		
		9A.2-15	Surrounde	ed by fire barriers rated at	3 hours			
		9A.2-16		Except	basemat (non-rated)			
			•					
Consisting	of the followi	ng Rooms:	Fire De	tection	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-1400	4183	Class IIIB lubricants	Area-wide photoelectric	Area-wide spot heat	Preaction sprinkler	Hose racks		
		Cable insulation			12.2 L/min per m2	(in nearby stairwells)		
	4104	Class IIIB lubricants	Dry-pilot detection		over most remote 302 m2			
		Cable insulation						
		< 28 m3 Hydrogen						
	4103	Class IIIB lubricants	Area-wide ionization					
		Cable insulation						
		Filter media						
	4292	None	Area-wide ionization					
		. =00	1					
		> 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire on safe shutdown:			
					Complete burnout of all equipment and cables within			
Assuming operation of installed fire extinguishing ed		juipment, impact of fire upor	n:	this Fire Area affects up to all for	ar redundant FW			
Plant operation: Turbine trip; outage req			uired to restore		pumps, but affects no safety-rela	ted or safe shutdown		
Radio	logical release	: Contained within building	ng		divisional equipment; all safety d	ivisions and both		
	Life safety	Travel distance limits to	EXITs meet NFPA 101		redundant trains A and B are op	erable.		
Manu	al firefighting	: Access via stairwells						
	Property loss	: Moderate						

	Fire Area:	F4108	Description:	Charcoal Adsorbers		
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 15, 72, 101, 804	
	-	DCD Fig:		Bui	lding code occupancy classification:	F-1
		9A.2-12]		Electrical classification:	none
		9A.2-13		Safety-rel	ated divisional equipment or cables:	none
		9A.2-14		Nonsafety-related redu	indant trains or equipment or cables:	none
		9A.2-15	Surround	ed by fire barriers rated at:	3 hours	
				Except:	basemat (non-rated)	
]			
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
	Î	ĺ	1		1	
-1400	Adsorber	Charcoal	Process indication	Manual pulls	Internal manual spray in each	Hose racks
	Adsorber A			(outside Elev	adsorber vessel	(in nearby stairwell)
	Adsorber B			at each landing)		` -
	Adsorber C					
1	Adsorber D					
1	Adsorber E					
1	Adsorber F					
	Adsorber G					
	Adsorber H					
	4108	Class IIIB lubricants	Area-wide ionization		ABC fire extinguishers	
		Cable insulation			(outside Elev	
12000	4386				at each landing)	
L			<u> </u>			
						
		- 700	Π	1 3 674 - 0		• . • .
		< '/00	Anticipated combustible io	ad, MJ/m2	Assuming automatic & manual FP	equipment does not
		700	Unsprinklered combustible	: load limit, MJ/m2	function, impact of design basis fire	e on sate shutdown:
		. 11 1 (*			Complete burnout of all equipme	nt and cables within
Assuming o	operation of ins	stalled fire extinguisning ec	juipment, impact of fire upor	n:	this Fire Area attects no safety-re	lated or safe shutdown
P. J. J	lant operation:	None			divisional equipment; all safety d	ivisions and both
Kadioi	ogical release:	Contained within building	ng ENVER A NEDA 101		redundant trains A and B are ope	erable.
	Life safety:	Travel distance limits to	EXITs meet NFPA 101			
Manu	al firefighting:	Access via stairwells and	interior doors			
	Property loss:	Moderate		ł		

	Fire Area:	F4190	Description: Elevator A					
	Building	Turbine	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804; ASME A17.1				
		DCD Fig:	_	Building code occupancy classification: F-1				
		9A.2-12			Electrical classification:	none		
		9A.2-13		Safety-re	lated divisional equipment or cables:	none		
		9A.2-14		Nonsafety-related redu	undant trains or equipment or cables:	none		
		9A.2-15	Surround	ed by fire barriers rated at	t: 3 hours			
		9A.2-16		Except	: basemat (non-rated); elevator do	oors (1.5 hr rated)		
		9A.2-17						
Consisting	of the followir	ng Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-1400	4190	Class IIIB lubricants Cable insulation	Area-wide ionization	Manual pulls (outside Elev at each landing)	ABC fire extinguishers (outside Elev at each landing)	Hose racks (in nearby stairwell)		
36000	4680	Class IIIB lubricants Cable insulation Electrical equipment	-		CO2 fire extinguisher (outside room)			
< 700 Assuming operation of installed fire extinguishing equivalent operation: None Radiological release: None, no radiological matrix to the safety: Travel distance limits to Manual firefighting: Access via stairwells and Property loss: Negligible			Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo nterials present EXITs meet NFPA 101 hoistway doors	ad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipmen this Fire Area affects no safety-re divisional equipment; all safety d redundant trains A and B are ope	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.		
	Property loss	Negligible						

Fire Area: F4191			Description: Stairwell A					
Building: Turbine			Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804					
DCD Fig:			Building code occupancy classification: F-1					
9A.2-12			Electrical classification: none					
9A.2-13			Safety-related divisional equipment or cables: none					
9A.2-14			Nonsafety-related redundant trains or equipment or cables: none					
9A.2-15			Surrounded by fire barriers rated at: 3 hours					
9A.2-16			Except: basemat (non-rated)					
9A.2-17								
Consisting of the following Rooms:			Fire Detection		Fire Suppression			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-1400	4191	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers		
4650				(outside stairwell				
12000				at each landing)				
20000								
28000								
33000								
36000								
		negligible Anticipated combustible load, MJ		ad, MJ/m2	Assuming automatic & manual FP equipment does not			
700		700	Unsprinklered combustible load limit, MJ/m2		function, impact of design basis fire on safe shutdown:			
					Complete burnout of all equipment and cables within			
Assuming operation of installed fire extinguishing equipment, impact of fire upo				n:	this Fire Area affects no safety-related or safe shutdown			
Plant operation: None					divisional equipment; all safety divisions and both			
Radiological release: None, no radiological		None, no radiological ma	iterials present		redundant trains A and B are operable.			
Life safety: Trav		Fravel distance limits to EXITs meet NFPA 101						
Manual firefighting		Access via exterior and interior doors						
Property loss: Negligible		Nagligibla						
	Flopenty loss.	Negligible						
	Fire Area:	F4192	Description:	Description: Elevator B				
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	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804; ASME A	A17.1		
		DCD Fig:	-	Bu	ilding code occupancy classification:	F-1		
		9A.2-12	1		Electrical classification:	none		
		9A.2-13		Safety-re	elated divisional equipment or cables:	none		
		9A.2-14	Nonsafety-related redundant trains or equipment or cables: none					
		9A.2-15	Surrounded by fire barriers rated at: 3 hours					
		9A.2-16		Except: basemat (non-rated); elevator doors (1.5 hr rated)				
		9A.2-17]					
Consisting	of the followir	ıg Rooms:	Fire De	tection	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
								
-1400	4192	Class IIIB lubricants Cable insulation	Area-wide ionization	Manual pulls (outside Elev at each landing)	ABC fire extinguishers (outside Elev at each landing)	Hose racks (in nearby stairwell)		
57000	4681	Class IIIB lubricants Cable insulation Electrical equipment			CO2 fire extinguisher (outside room)			
Assuming c P Radiol Manu	operation of ins lant operation: logical release: Life safety: al firefighting: Property loss	< 700 700 stalled fire extinguishing ec None None, no radiological ma Travel distance limits to Access via stairwells and Negligible	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upon aterials present EXITs meet NFPA 101 I hoistway doors	ad, MJ/m2 load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipment this Fire Area affects no safety-red divisional equipment; all safety d redundant trains A and B are op	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.		

	Fire Area:	F4193	Description:	Description: Stairwell B				
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 101, 804			
		DCD Fig:	_	Bui	lding code occupancy classification:	F-1		
		9A.2-12			Electrical classification:	none		
		9A.2-13	Safety-related divisional equipment or cables: none					
		9A.2-14	Nonsafety-related redundant trains or equipment or cables: none					
		9A.2-15	Surrounded by fire barriers rated at: 3 hours					
		9A.2-16		Except:	basemat (non-rated)			
		9A.2-17						
			•					
Consisting	of the followin	g Rooms:	Fire De	tection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-1400	4193	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers		
4650				(outside stairwell				
12000				at each landing)				
20000								
28000								
33000								
43500]		1					
54000]		1					
57000								
Assuming o P Radiol Manu	operation of ins lant operation: logical release: Life safety: al firefighting: Property loss:	negligible 700 atalled fire extinguishing eq None None, no radiological ma Travel distance limits to Access via exterior and in Negligible	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upon iterials present EXITs meet NFPA 101 nterior doors	ad, MJ/m2 load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects no safety-re divisional equipment; all safety d redundant trains A and B are ope	equipment does not e on safe shutdown: int and cables within lated or safe shutdown livisions and both erable.		

	Fire Area:	. F4194	Description:	Description: Elevator C				
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804; ASME A	A17.1		
		DCD Fig:	_	Bı	uilding code occupancy classification:	F-1		
		9A.2-12	7		Electrical classification:	none		
		9A.2-13	Safety-related divisional equipment or cables: none					
		9A.2-14		Nonsafety-related red	lundant trains or equipment or cables:	none		
		9A.2-15	Surround	ed by fire barriers rated a	at: 3 hours			
		9A.2-16		Excep	ot: basemat (non-rated); elevator de	oors (1.5 hr rated)		
		9A.2-17						
Consisting (of the followir	ng Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-1400	4194	Class IIIB lubricants Cable insulation	Area-wide ionization	Manual pulls (outside Elev at each landing)	ABC fire extinguishers (outside Elev at each landing)	Hose racks (in nearby stairwell)		
31000	4682	Class IIIB lubricants Cable insulation Electrical equipment			CO2 fire extinguisher (outside room)			
< 700			Anticipated combustible lo Unsprinklered combustible quipment, impact of fire upor aterials present EXITs meet NFPA 101 d hoistway doors	ad, MJ/m2 ; load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipmen this Fire Area affects no safety-re divisional equipment; all safety d redundant trains A and B are op	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.		
	Property loss	Negligible	· · · · ·					

	Fire Area:	F4195	Description:	Description: Stairwell C				
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804			
		DCD Fig:	_	Bui	ilding code occupancy classification:	F-1		
		9A.2-12			Electrical classification:	none		
		9A.2-13	Safety-related divisional equipment or cables: none					
		9A.2-14		Nonsafety-related redu	undant trains or equipment or cables:	none		
		9A.2-15	Surround	ed by fire barriers rated at	: 3 hours			
9A.2-16				Except	: basemat (non-rated)			
		9A.2-17						
Consisting of the following Rooms:			Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-1400	4195	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers		
8200	1			(outside stairwell		_		
12000	1			at each landing)				
20000	1							
28000	1							
31000	1							
		negligible	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP equipment does not			
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:			
					Complete burnout of all equipme	ent and cables within		
Assuming c	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upo	n:	this Fire Area affects no safety-re	elated or safe shutdown		
P	lant operation:	None			divisional equipment; all safety d	ivisions and both		
Radiol	ogical release:	None, no radiological ma	terials present		redundant trains A and B are op	erable.		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101					
Manu	al firefighting:	Access via exterior and in	aterior doors					
	Property loss:	Negligible						

	Fire Area: F4196 Description: Elevator D							
	Building	: Turbine	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804; ASME A	A17.1		
		DCD Fig:		Bu	uilding code occupancy classification:	F-1		
		9A.2-12	7		Electrical classification:	none		
		9A.2-13		Safety-related divisional equipment or cables: none				
		9A.2-14		Nonsafety-related redundant trains or equipment or cables: none				
		9A.2-15	Surround	Surrounded by fire barriers rated at: 3 hours				
		9A.2-16		Excep	ot: basemat (non-rated); elevator de	oors (1.5 hr rated)		
		9A.2-17						
Consisting	of the following	ng Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-1400	4196	Class IIIB lubricants	Area-wide ionization	Manual pulls	ABC fire extinguishers	Hose racks		
		Cable insulation		(outside Elev	(outside Elev	(in nearby stairweii)		
				at each landing)	at each landing)			
31000	4683	Class IIIB lubricants			CO2 fire extinguisher			
51000	1005	Cable insulation			(outside room)			
		Flootrical equipment			(outside room)			
	ł							
	<u> </u>		<u> </u>					
		< 700	Anticipated combustible lo	ad. MJ/m2	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function impact of design basis fire on safe shutdown.			
					Complete burnout of all equipme	ent and cables within		
Assuming (operation of in	stalled fire extinguishing e	auipment, impact of fire upo	n:	this Fire Area affects no safety-re	elated or safe shutdown		
P	lant operation	: None			divisional equipment; all safety d	ivisions and both		
Radiol	logical release	None, no radiological m	aterials present		redundant trains A and B are op	erable.		
	Life safety	Travel distance limits to	EXITs meet NFPA 101		· · · · · · · · · · · · · · · · · · ·			
Manu	al firefighting	: Access via stairwells and	d hoistway doors					
	Property loss	. Negligible	· · ·					
	1 2	80						

	Fire Area:	F4197	Description: Stairwell D			
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804	
		DCD Fig:	-	Bui	lding code occupancy classification:	F-1
		9A.2-12]		Electrical classification:	none
		9A.2-13		Safety-rel	ated divisional equipment or cables:	none
		9A.2-14	Nonsafety-related redundant trains or equipment or cables: none			
		9A.2-15	Surround	ed by fire barriers rated at:	3 hours	
9A.2-16				Except	basemat (non-rated)	
		9A.2-17				
Consisting of the following Rooms:		ig Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
-1400	4197	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers
4650				(outside stairwell		
12000				at each landing)		
20000						
28000						
31000	<u> </u>					
		negligible	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP equipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:	
			-		Complete burnout of all equipme	ent and cables within
Assuming c	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upor	n:	this Fire Area affects no safety-re	elated or safe shutdown
P	lant operation:	None			divisional equipment; all safety d	ivisions and both
Radiol	ogical release:	None, no radiological ma	aterials present		redundant trains A and B are op	erable.
	Life safety:	Travel distance limits to	EXITs meet NFPA 101			
Manua	al firefighting:	Access via exterior and i	nterior doors			
	Property loss:	Negligible				

	Fire Area:	F4250	Description: Reactor Component Cooling Water A				
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 101, 804		
		DCD Fig:	=	Bui	lding code occupancy classification:	F-1	
1		9A.2-13	1		Electrical classification:	none	
1		9A.2-14		Safety-rel	ated divisional equipment or cables:	none	
1				Nonsafety-related redu	ndant trains or equipment or cables:	Α	
			Surround	ed by fire barriers rated at:	3 hours		
1			Except: none				
1							
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
					<u> </u>		
4650	4250	Electrical equipment	Area-wide ionization	Manual pulls	Hose racks	CO2 fire	
		Cable insulation		(outside stairwells	(in nearby stairwells)	extinguishers	
		Class IIIB lubricants		at each landing)			
	 	+	ł – – – – – – – – – – – – – – – – – – –		ł		
	<u> </u>		<u>I</u>				
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	eauipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:	
		I	r	,	Complete burnout of all equipme	ent and cables within	
Assuming (operation of in	stalled fire extinguishing eo	uipment, impact of fire upo	n:	this Fire Area affects only redund	lant train A equipment	
P	lant operation:	None			and no safety-related or safe shut	down divisional	
Radiol	logical release:	None, no radiological ma	aterials present		equipment: all safety division and	l redundant train B	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		equipment are operable.		
Manu	al firefighting:	Access via stairwells					
	Property loss:	Moderate					
	1 2			1			

	Fire Area:	F4260	Description:	Reactor Component Co	ooling Water B			
	Building:	Turbine	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804				
		DCD Fig:		Bu	ilding code occupancy classification:	F-1		
		9A.2-13	Electrical classification: none					
		9A.2-14	Safety-related divisional equipment or cables: none					
				Nonsafety-related red	undant trains or equipment or cables:	В		
			Surround	ed by fire barriers rated a	t: 3 hours			
				Excep	t: none			
Consisting of the following Rooms:			Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
				*		^		
4650	4260	Electrical equipment	Area-wide ionization	Manual pulls	Hose racks	CO2 fire		
		Cable insulation		(outside stairwells	(in nearby stairwells)	extinguishers		
		Class IIIB lubricants		at each landing)	· · /	C		
			-					
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
					Complete burnout of all equipme	ent and cables within		
Assuming	operation of ins	stalled fire extinguishing e	quipment, impact of fire upo	n:	this Fire Area affects only redund	dant train B equipment		
Р	lant operation:	None			and no safety-related or safe shut	tdown divisional		
Radio	logical release:	None, no radiological m	aterials present equipment; all safety division and redundant trai			d redundant train A		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101 equipment are operable.					
Manu	al firefighting:	Access via stairwells						
	Property loss:	Moderate						

	Fire Area	: F4307	Description: Turbine EHC				
	Building	: Turbine	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 13, 14, 15, 72, 101, 804		
		DCD Fig:		Bu	ilding code occupancy classification:	F-1	
		9A.2-14	7	Electrical classification: none			
			Safety-related divisional equipment or cables: none				
				Nonsafety-related redundant trains or equipment or cables: none			
			Surrounde	ed by fire barriers rated at	t: 3 hours		
				Except	t: none		
Consisting	of the following	ng Rooms:	Fire De	tection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
12000	4307	<3,500 L Class IIIA	Suppression flowswitch	Manual pulls	Dry-pilot deluge	Hose racks	
		hydraulic oil		(outside stairwells	12.2 L/min per m2	(in nearby stairwells)	
		Cable insulation		at each landing)			
		Class IIIB lubricants			_		
	<u> </u>	<u> </u>					
			٦			· · · · ·	
		> 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:	
					Complete burnout of all equipme	ent and cables within	
Assuming operation of installed fire extinguishing ec			juipment, impact of fire upon:		this Fire Area affects no safety-related or safe shutdown		
i ibbuilling (<u>In-p,</u>				
P	lant operation	Turbine trip; restoration	n required prior to restart		divisional equipment; all safety d	ivisions and both	
P Radiol	lant operation	Turbine trip; restoration None, no radiological ma	n required prior to restart aterials present		divisional equipment; all safety d redundant trains A and B are op	livisions and both erable.	
P Radiol	lant operation logical release Life safety	Turbine trip; restoratio None, no radiological m Travel distance limits to	n required prior to restart aterials present EXITs meet NFPA 101		divisional equipment; all safety d redundant trains A and B are op	livisions and both erable.	
P Radiol Manu	logical release Life safety al firefighting	: Turbine trip; restoratio : None, no radiological m : Travel distance limits to Access via interior door	n required prior to restart aterials present EXITs meet NFPA 101		divisional equipment; all safety d redundant trains A and B are op	livisions and both erable.	
P Radiol Manu	lant operation logical release Life safety al firefighting: Property loss	Turbine trip; restoratio None, no radiological m Travel distance limits to Access via interior door Moderate	n required prior to restart aterials present EXITs meet NFPA 101		divisional equipment; all safety d redundant trains A and B are op	livisions and both erable.	

	Fire Area:	F4308	Description: Turbine Lube Oil					
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 11, 13, 14, 15, 16, 72, 101	, 804		
		DCD Fig:	-	Bui	lding code occupancy classification:	F-1		
		9A.2-14	Electrical classification: none					
		9A.2-15	Safety-related divisional equipment or cables: none					
			Nonsafety-related redundant trains or equipment or cables: none					
			Surround	ed by fire barriers rated at	: 3 hours			
				Except	none			
Consisting	of the followin	g Rooms:	Fire De	tection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
					1			
12000	4308	< 50,000 L Class IIIB lubricants Cable insulation	Suppression flowswitch	Manual pulls (outside stairwells at each landing)	Dry-pilot foam-water deluge 16.3 L/min per m2	Hose racks (in nearby stairwells)		
			Anticipated combustible load, MJ/m2 Unsprinklered combustible load limit, MJ/m2		Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Complete burnout of all equipment and cables within			
		> 700 700	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme	equipment does not e on safe shutdown: ent and cables within		
Assuming of	operation of ins	> 700 700 stalled fire extinguishing ec	Anticipated combustible lo Unsprinklered combustible juipment, impact of fire upor	ad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects no safety-re	equipment does not e on safe shutdown: ant and cables within lated or safe shutdown		
Assuming o	operation of ins lant operation:	> 700 700 stalled fire extinguishing ec Turbine trip; restoration	Anticipated combustible lo Unsprinklered combustible juipment, impact of fire upon required prior to restart	ad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects no safety-re divisional equipment; all safety d	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown ivisions and both		
Assuming o P Radiol	operation of ins Plant operation: logical release:	> 700 700 stalled fire extinguishing eq Turbine trip; restoration None, no radiological ma	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upon required prior to restart iterials present	ad, MJ/m2 9 load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects no safety-red divisional equipment; all safety d redundant trains A and B are ope	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.		
Assuming o P Radiol	operation of ins Plant operation: logical release: Life safety:	> 700 700 stalled fire extinguishing ex Turbine trip; restoration None, no radiological ma Travel distance limits to	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upon required prior to restart aterials present EXITs meet NFPA 101	ad, MJ/m2 9 load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects no safety-ree divisional equipment; all safety d redundant trains A and B are ope	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.		
Assuming o P Radiol Manu	operation of ins Plant operation: logical release: Life safety: nal firefighting:	> 700 700 stalled fire extinguishing ed Turbine trip; restoration None, no radiological ma Travel distance limits to Access via interior door	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upon required prior to restart aterials present EXITs meet NFPA 101	ad, MJ/m2 9 load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects no safety-red divisional equipment; all safety d redundant trains A and B are ope	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.		
Assuming o P Radiol Manu	operation of ins lant operation: logical release: Life safety: al firefighting: Property loss:	> 700 700 stalled fire extinguishing equations stalled fire extinguishing equation Turbine trip; restoration None, no radiological matrix Travel distance limits to Access via interior door Moderate	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upon required prior to restart aterials present EXITs meet NFPA 101	ad, MJ/m2 9 load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects no safety-red divisional equipment; all safety d redundant trains A and B are ope	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.		

	Fire Area:	F4350	Description: Instrument Air A				
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804		
		DCD Fig:	_	Bui	lding code occupancy classification:	F-1	
1		9A.2-14]	Electrical classification: none			
				Safety-related divisional equipment or cables: none			
1				Nonsafety-related redu	ndant trains or equipment or cables:	A	
			Surround	ed by fire barriers rated at:	3 hours		
1			Except: none				
Consisting of the following Rooms:			Fire Detection Fire Suppre		Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
			<u> </u>		İ		
12000	4350	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire	
I	1	Class IIIB lubricants		(outside stairwells	(in nearby stairwells)	extinguishers	
I	1			at each landing)			
	1						
	1						
┠───┤	 	<u> </u>	┨─────┤	 			
╏────┘	L		<u> </u>				
		< 700	1. sisted combustible lo	1 MI/	A	inmant dags not	
1		~ /00	Anticipated combustible	ad, MJ/mZ	Assuming automatic & manual Fr	equipment does not	
1		/00	Unsprinkiered combusuble	; load limit, MJ/III2	function, impact of design basis inc	e on sale shutdown:	
A according of		-+-11 ad fine entinemiching of			Complete burnout of all equipme	ent and cables within	
Assuming o	peration of m	stalled fire extinguishing eq	ulpment, impact of fife upon	n:	this Fire Area attects only reduce	dant train A equipment	
r I Dadial	ant operation.	None no rediological me	tariala procent		and no safety-related or safe shut	down divisional	
Kaulon	Ogical Icicase.	None, no rautological ma	EVITS most NEDA 101		equipment; all safety division and	d redundant train B	
Manu	Llie Salety.	A acces via stairwalls	EATTS meet INFT A 101		equipment are operable.		
Ivianua	al intengiung.	Access via stair wens					
	Property loss.	WIINOF [®]		ł			

	Fire Area:	F4360	Description:	Instrument Air B			
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 101, 804		
		DCD Fig:	=	Buil	ding code occupancy classification:	F-1	
1		9A.2-14		Electrical classification: none			
				Safety-rela	ated divisional equipment or cables:	none	
1				Nonsafety-related redu	ndant trains or equipment or cables:	В	
1			Surround	ed by fire barriers rated at:	3 hours		
			Except: none				
Consisting of the following Rooms:			Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
12000	4360	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire	
		Class IIIB lubricants		(outside stairwells	(in nearby stairwells)	extinguishers	
				at each landing)	1		
					1		
					1		
		1	1				
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:	
			•		Complete burnout of all equipme	nt and cables within	
Assuming of	operation of ins	stalled fire extinguishing eq	juipment, impact of fire upo	<u>n</u> :	this Fire Area affects only redund	lant train B equipment	
P	lant operation:	None			and no safety-related or safe shut	down divisional	
Radiol	ogical release:	None, no radiological ma	iterials present		equipment; all safety division and	l redundant train A	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		equipment are operable.		
Manu	al firefighting:	Access via stairwells					
	Property loss:	. Minor					

	Fire Area:	F4550	Description: Chilled Water A				
1	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 101, 804; ASHRA	E 15	
		DCD Fig:	_	Buil	lding code occupancy classification:	F-1	
		9A.2-16	Electrical classification: none				
1		9A.2-17		Safety-rel	ated divisional equipment or cables:	none	
1				Nonsafety-related redu	ndant trains or equipment or cables:	Α	
1			Surrounded by fire barriers rated at: 3 hours				
1				Except:	none		
			J				
Consisting of the following Rooms:			Fire De	etection	Fire Suppression		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
		<u> </u>					
28000	4550	Electrical equipment	Area-wide ionization	Manual pulls	Hose racks	ABC fire	
		Cable insulation		(outside stairwells	(in nearby stairwells)	extinguishers	
		Class IIIB lubricants		at each landing)			
		1					
			<u> </u>	L			
		< 700	Anticipated combustible lo	oad. MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function. impact of design basis fire	e on safe shutdown:	
			end t		Complete burnout of all equipme	ent and cables within	
Assuming c	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upor	n:	this Fire Area affects only redund	dant train A equipment	
P	lant operation:	None	·		and no safety-related or safe shut	down divisional	
Radiol	logical release:	None, no radiological ma	terials present		equipment; all safety division and	l redundant train B	
Life safety: Travel distance limits to			EXITs meet NFPA 101		equipment are operable.		
Manu	al firefighting:	Access via stairwells					
	Property loss:	Moderate					
	-	•			<u>.</u>	-	

	Fire Area:	. F4560	Description: Chilled Water B					
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; M	NFPA 10, 14, 72, 101, 804; ASHRA	E 15		
		DCD Fig:	Building code occupancy classification: F-1					
		9A.2-16	1	Electrical classification: none				
		9A.2-17	Safety-related divisional equipment or cables: none					
			Nonsafety-related redundant trains or equipment or cables: B					
			Surrounded by fire barriers rated at: 3 hours					
				Except	: none			
			J					
Consisting	of the followir	ng Rooms.	Fire De	etection	Fire Suppression			
EL	FI Room # Potential Combustibles		Primary	Backup	Primary	Backup		
						Zuring		
28000	4560	Electrical equipment	Area-wide ionization	Manual pulls	Hose racks	ABC fire		
		Class IIIB lubricants		at each landing)		extinguishers		
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
				,	Complete burnout of all equipme	ent and cables within		
Assuming c	operation of in	stalled fire extinguishing ec	quipment, impact of fire upo	n:	this Fire Area affects only redund	dant train B equipment		
Р	lant operation:	None			and no safety-related or safe shut	down divisional		
Radiol	logical release:	None, no radiological ma	aterials present		equipment; all safety division and	l redundant train A		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		equipment are operable.			
Manu	al firefighting:	Access via stairwells						
	Property loss:	: Moderate						
				'				

	Fire Area:	F4651	Description: Water Surge Tanks A					
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 101, 804			
		DCD Fig:	Building code occupancy classification: F-1					
		9A.2-17			Electrical classification:	none		
				Safety-rela	ated divisional equipment or cables:	none		
				Α				
			Surround	ed by fire barriers rated at:	3 hours			
				Except:	none			
Consisting of the following Rooms:			Fire De	etection	Fire Suppression			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
33000	4651	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire		
		Class IIIB lubricants		(outside stairwells	(in nearby stairwells)	extinguishers		
				at each landing)				
						<u> </u>		
						<u> </u>		
		< 700	Anticipated combustible lo	ad MI/m?	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	load limit MI/m?	function impact of design basis fire	e on safe shutdown.		
		/00	Unsprinkieren combustion	10au 111111, 1913/1112	Complete hurnout of all equipme	ont and cables within		
Assuming (operation of in	stalled fire extinguishing eq	uinment impact of fire upo	n.	this Fire Area affects only redund	dont train A equinment		
Assuming C	lant operation.	Nono	ulpinent, impact of the upo	11. 	and no safety-related or safe shut	tant train A equipment		
Radiol	ogical release.	None no radiological ma	terials present		and no safety-related of safe shut	d rodundant train B		
Radioi	I ife safety:	Travel distance limits to	FVITs meet NFPA 101		equipment, an safety unvision and			
Manu	al firefighting.	Access via stairwells			equipment are operable.			
Ivianu	Property loss	Minor						
	Property loss: Minor							

Fire Area: F4661 Descript				Water Surge Tanks B				
	Building:	Turbine	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 101, 804			
		DCD Fig:	-	Buil	ding code occupancy classification:	F-1		
		9A.2-17	Electrical classification: none					
				Safety-rela	ated divisional equipment or cables:	none		
1				Nonsafety-related redu	ndant trains or equipment or cables:	В		
1			Surround	ed by fire barriers rated at:	3 hours			
1				Except:	none			
]					
Consisting of the following Rooms:			Fire De	etection	Fire Suppression			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
33000	4661	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire		
		Class IIIB lubricants		(outside stairwells	(in nearby stairwells)	extinguishers		
				at each landing)				
	ł	<u>+</u>	1					
	1	<u> </u>	<u> </u>					
		< 700	Anticipated combustible lo	oad. MJ/m2	Assuming automatic & manual FP	eauipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
			F	,	Complete burnout of all equipme	ent and cables within		
Assuming c	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upo	n:	this Fire Area affects only redund	lant train B equipment		
P	lant operation:	None			and no safety-related or safe shut	down divisional		
Radiol	logical release:	None, no radiological ma	terials present		equipment; all safety division and	l redundant train A		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		equipment are operable.			
Manu	al firefighting:	Access via stairwells						
	Property loss:	Minor						

Table	9A.5-5.	Radwaste	Building
I abic	<i>71</i> 10 <i>0</i> 9	1 uu music	Dunung

	Fire Area:	: F6101	Description: Radwaste Handling Equipment				
	Building:	Radwaste	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 13, 14, 72, 90A, 101, 804				
	-	DCD Fig:	Building code occupancy classification: F-1				
		9A.2-20	Electrical classification: none				
		9A.2-21		Safety-related div	visional equipment or cables:	none	
		9A.2-22	Ν	Nonsafety-related redundant tr	rains or equipment or cables:	none	
		9A.2-23	Surrou	inded by fire barriers rated at:	3 hours		
				Except: basemat (nor	n-rated); exterior undergro	und walls (non-rated);	
Consistin	g of the following Rooms:		Fi	re Detection	Fire Su	ppression	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-9350	6100, 6101, 6102, 6103, 6104,	Class IIIB lubricants	Suppression	Manual pulls	Wet-pipe sprinkler	Hose racks	
	6105, 6106, 6107, 6108, 6109,	Cable insulation	flowswitch	(outside stairwell	8.1 L/min per m2	(in nearby stairwells)	
	6150, 6151, 6160, 6161,	Transient combustibles		at each landing)	over 140 m2	ABC fire extinguishers	
	6171, 6172, 6180, 6181, 6182,	Class A combustibles					
	6183, 6184, 6185,						
	6186, 6187, 6188, 6189	-					
-2350	6200, 6201, 6280, 6281, 6282,						
4650	6283, 6284, 6285, 6286	4					
4650	6381						
	Chargeal Filter	Chargood	нулс	4	Internal manual spray		
	Charcoar Filter	Charcoai			Internal manual spray		
			temperature				
			Indication				
		> 700	Anticipated combu-	stible load, MJ/m2	Assuming automatic & man	ual FP equipment does not	
		700	Unsprinklered com	bustible load limit. MJ/m2	function, impact of design b	asis fire on safe shutdown:	
			onspinner		Complete burnout of all ec	uinment and cables within	
Assuming	g operation of installed fire extin-	guishing equipment, impact	of fire upon:		this Fire Area affects no sa	fety-related or safe	
-	Plant operation:	None; restoration requir	ed before handling	radwaste	shutdown divisional equip	ment: all safety divisions	
	Radiological release:	Contained within buildin	ig per 10 CFR 100 l	limits	and both redundant trains	A and B are operable.	
Life safety: Travel distance limits to EXITs meet NFPA 101							
	Manual firefighting:	Access via stairwells and	exterionr doors				
	Property loss:	. Moderate					

	Fire Area:	F6170	Description: Electrical Equipment				
	Building:	Radwaste	Applicable codes:	IBC; Reg Guide 1.18	9; NFPA 10, 14, 72, 101, 804		
		DCD Fig:		Building code occupancy classification: F-1			
		9A.2-20]		Electrical classification:	none	
		9A.2-21		Safety-rel	ated divisional equipment or cables:	none	
			Nonsafety-related redundant trains or equipment or cables: none				
			Surrounded b	Surrounded by fire barriers rated at: 3 hours			
				Except:	basemat (non-rated); elevator do	oors (1.5 hr rated);	
]		exterior underground walls (non-	-rated)	
Consisting of the following Rooms:		Fire Detect	tion	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
							
-9350	6170	Electrical equipment	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks	
		Cable insulation		(outside stairwells		(in nearby stairwells)	
1	1		1 · · · · · · · · · · · · · · · · · · ·			· · · /	
				at each landing)			
				at each landing)			
				at each landing)			
		< 1400	Anticipated combustible load,	at each landing) MJ/m2	Assuming automatic & manual FP	equipment does not	
		<1400 1400	Anticipated combustible load, Unsprinklered combustible loa	at each landing) MJ/m2 d limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fir	equipment does not e on safe shutdown:	
		<1400 1400	Anticipated combustible load, Unsprinklered combustible loa	at each landing) MJ/m2 d limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipme	equipment does not e on safe shutdown: ent and cables within	
Assuming of	operation of ins	< 1400 1400 stalled fire extinguishing eq	Anticipated combustible load, Unsprinklered combustible loa uipment, impact of fire upon:	at each landing) MJ/m2 d limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipme this Fire Area affects no safety-re	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown	
Assuming o	operation of inslant operation:	1400 1400 3talled fire extinguishing eq None; restoration required	Anticipated combustible load, Unsprinklered combustible loa uipment, impact of fire upon: ed before handling radwaste	at each landing) MJ/m2 d limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipment this Fire Area affects no safety-red divisional equipment; all safety d	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both	
Assuming c P Radiol	operation of ins lant operation: ogical release:	< 1400 1400 stalled fire extinguishing equivalent in the state of	Anticipated combustible load, Unsprinklered combustible loa uipment, impact of fire upon: ed before handling radwaste tterials present	at each landing) MJ/m2 d limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipment this Fire Area affects no safety-re divisional equipment; all safety d redundant trains A and B are op	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.	
Assuming c P Radiol	operation of ins lant operation: logical release: Life safety:	< 1400 1400 stalled fire extinguishing eq None; restoration requir None, no radiological ma Travel distance limits to	Anticipated combustible load, Unsprinklered combustible loa uipment, impact of fire upon: ed before handling radwaste iterials present EXITs meet NFPA 101	at each landing) MJ/m2 d limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipmen this Fire Area affects no safety-re divisional equipment; all safety d redundant trains A and B are op	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.	
Assuming o P Radiol Manu	operation of ins lant operation: logical release: Life safety: al firefighting:	< 1400 stalled fire extinguishing eq None; restoration requir None, no radiological ma Travel distance limits to Access via stairwells	Anticipated combustible load, Unsprinklered combustible loa uipment, impact of fire upon: ed before handling radwaste iterials present EXITs meet NFPA 101	at each landing) MJ/m2 d limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipmen this Fire Area affects no safety-re divisional equipment; all safety d redundant trains A and B are op	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.	
Assuming o P Radiol Manu	operation of ins lant operation: logical release: Life safety: al firefighting: Property loss:	< 1400 Stalled fire extinguishing eq None; restoration requir None, no radiological ma Travel distance limits to Access via stairwells Moderate	Anticipated combustible load, Unsprinklered combustible loa uipment, impact of fire upon: ed before handling radwaste iterials present EXITs meet NFPA 101	at each landing) MJ/m2 d limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipment this Fire Area affects no safety-ro divisional equipment; all safety d redundant trains A and B are op	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.	

	Fire Area	F6190	Description: Elevator					
	Building	Radwaste	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804; ASME A17.1				
		DCD Fig:		Bu	ilding code occupancy classification:	F-1		
		9A.2-20			Electrical classification:	none		
		9A.2-21		Safety-re	elated divisional equipment or cables:	none		
		9A.2-22		Nonsafety-related red	undant trains or equipment or cables:	none		
9A.2-23			Surround	ed by fire barriers rated a	t: 3 hours			
				Excep	t: basemat (non-rated); elevator de	oors (1.5 hr rated)		
			-					
Consisting	of the following	ng Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-9350	6190	Class IIIB lubricants Cable insulation	Area-wide ionization	Manual pulls (outside Elev at each landing)	ABC fire extinguishers (outside Elev at each landing)	Hose racks (in nearby stairwell)		
13650	6580	Class IIIB lubricants Cable insulation Electrical equipment			CO2 fire extinguisher (outside room)			
< 700 700 Assuming operation of installed fire extinguishing equivalence Plant operation: None			Anticipated combustible lo Unsprinklered combustible quipment, impact of fire upor	e load, MJ/m2 ible load limit, MJ/m2 pon: Assuming automatic & manual FP equipment d function, impact of design basis fire on safe shu Complete burnout of all equipment and cabl this Fire Area affects no safety-related or saf divisional equipment: all safety divisions and		equipment does not e on safe shutdown: ent and cables within elated or safe shutdown ivisions and both		
Radiol	logical release	None, no radiological m	aterials present		redundant trains A and B are on	erable.		
	Life safety	Travel distance limits to	EXITs meet NFPA 101					
Manu	al firefighting	Access via stairwells and	d hoistway doors					
	Property loss	Negligible	v					
	1 2							

	Fire Area:	. F6191	Description:	Stairwell A				
	Building:	Radwaste	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804			
		DCD Fig:	_	Building code occupancy classification: F-1				
		9A.2-20		Electrical classification: none				
		9A.2-21		Safety-related divisional equipment or cables: none				
		9A.2-22		Nonsafety-related red	undant trains or equipment or cables:	none		
		9A.2-23	Surround	ed by fire barriers rated a	t: 3 hours			
				Excep	t: basemat (non-rated)			
	C (1 C 11)		Eine Di	4 4°				
Consisting	of the followin	ig Rooms:	Fire De	tection	Fire Suppres	sion D		
EL	Koom #	Potential Compustibles	Primary	Васкир	Primary	Васкир		
0250	(101		America in the investion	Manal wyllo	Here weaks	ADC for ortinguishous		
-9350	6191	None	Area-wide ionization	Manual pulls	HOSE FACKS	ABC fire extinguishers		
-2550	4			(Outside stail wen				
10650	1			at each fanung,				
13650	1							
15050	<u> </u>	+	ł – – – †		+			
'	L	<u> </u>	<u>. </u>					
		negligible	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fir	e on safe shutdown:		
					Complete burnout of all equipme	ent and cables within		
Assuming of	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upo	n:	this Fire Area affects no safety-ro	elated or safe shutdown		
P	'lant operation:	None			divisional equipment; all safety d	livisions and both		
Radiol	logical release:	None, no radiological ma	aterials present		redundant trains A and B are op	erable.		
1	Life safety:	Travel distance limits to	EXITs meet NFPA 101					
Manu	al firefighting:	Access via exterior and i	nterior doors					
	Property loss:	Negligible						
						,		

	Fire Area:	F6192	Description:	Stairwell B			
	Building:	Radwaste	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804		
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-20	Electrical classification: none				
		9A.2-21	Safety-related divisional equipment or cables: none				
		9A.2-22	Nonsafety-related redundant trains or equipment or cables: none				
		9A.2-23	Surrounded by fire barriers rated at: 3 hours				
			Except: basemat (non-rated)				
<u> </u>							
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppression		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
		ļ					
-9350	6192	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
-2350				(outside stairwell			
4650				at each landing)			
10650		<u> </u>	Į				
	l						
			1			· , 1 ,	
		negligible	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fir	e on safe shutdown:	
		. 11 1 (*			Complete burnout of all equipme	nt and cables within	
Assuming c	peration of ins	stalled fire extinguishing eq	uipment, impact of fire upor	n:	this Fire Area affects no safety-re	elated or safe shutdown	
	lant operation:	None			divisional equipment; all safety d	ivisions and both	
Radiol	ogical release:	None, no radiological ma	iterials present		redundant trains A and B are op	erable.	
	Life safety:	Travel distance limits to	EXITS meet NFPA 101				
Manu	al firefighting:	Access via exterior and in	nterior doors				
	Property loss:	Negligible					
4							

	Fire Area:	F6193	Description: Stairwell C				
	Building:	Radwaste	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804		
		DCD Fig:	_	Bu	ilding code occupancy classification:	F-1	
		9A.2-20	1		Electrical classification:	none	
		9A.2-21		Safety-re	lated divisional equipment or cables:	none	
		9A.2-22		Nonsafety-related red	undant trains or equipment or cables:	none	
		9A.2-23	Surrounded by fire barriers rated at: 3 hours				
			Except: basemat (non-rated)				
Consisting of the following Rooms:		Fire De	etection	Fire Suppression			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-9350	6193	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
-2350				(outside stairwell			
4650				at each landing)			
10650							
			7				
		negligible	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fir	e on safe shutdown:	
					Complete burnout of all equipme	ent and cables within	
Assuming o	operation of in	stalled fire extinguishing ec	juipment, impact of fire upo	n:	this Fire Area affects no safety-re	elated or safe shutdown	
P	lant operation:	None			divisional equipment; all safety d	livisions and both	
Radiol	ogical release:	None, no radiological ma	iterials present		redundant trains A and B are op	erable.	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101				
Manua	al firefighting:	Access via exterior and in	nterior doors				
	Property loss:	: Negligible					

Building: Radwaste DCD Fig: 9A.2-20 Building: code occupancy classification: F-1 9A.2-21 Building: Code occupancy classification: Inone 9A.2-22 Safety-related divisional equipment or cables: none 9A.2-23 Surrounded by fire barriers rated at: 3 hours EL Room # Potential Combustibles Primary Backup		Fire Area:	F6194	Description: Stairwell D				
DCD Fig: Building code occupancy classification: F-1 9A.2-20 9A.2-21 Safety-related divisional equipment or cables: none 9A.2-22 Nonsafety-related redundant trains or equipment or cables: none 9A.2-23 Surrounded by fire barriers rated at: Bours 9A.2-23 Surrounded by fire barriers rated at: Bours Except: basemat (non-rated) Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup -9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -2350 104 None Incicipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Radiological release: None, no radiological materials present Complete burnout of all equipment and cables within this Fire Area affects no safe shutdown: Radiological release: None, no radiological materials present Complete burnout of all equipment and cables within this Fire Area affects no safe shutdown: Manual firefighting: Travel distance linnits to EXITs meet NFPA 101 Co		Building:	Radwaste	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804		
9A.2-20 Belectrical classification: none 9A.2-21 Safety-related divisional equipment or cables: none 9A.2-23 Nonsafety-related redundant trains or equipment or cables: none 9A.2-23 Surrounded by fire barriers rated at: 3 hours Basemat (non-rated) Except: basemat (non-rated) Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup -3350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -2350 6194 None Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Complete burnout of all equipment, impact of fire upon: Plant operation: None, no radiological materials present Complete burnout of all equipment; all safety divisions and both redundant trains A and B are operable. Manual firefighting: Property loss: Negligible None Complete burnout of all equipment and cables within this Fire Area affects no safety-related or safe shutdown:			DCD Fig:	Building code occupancy classification: F-1				
9A.2-21 Safety-related divisional equipment or cables: none 9A.2-23 Nonsafety-related redundant trains or equipment or cables: none 9A.2-23 Surrounded by fire barriers rated at 3 Consisting of the following Rooms: Fire Detection EL Room # Potential Combustibles Primary Backup Primary -3350 6194 -3350 6194 -3350 Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers 10650 Integrigible Anticipated combustible load, MJ/m2 Unsprinklered combustible load, MJ/m2 Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None, no radiological materials present Life safety: Property loss: Manual firefighting Property loss: None, no radiological materials present Life safety: Property loss: Negligible			9A.2-20	Electrical classification: none				
9A.2-22 9A.2-23 Nonsafety-related redundant trains or equipment or cables: none Surrounded by fire barriers rated at: Basemat (non-rated) 3 hours Except: basemat (non-rated) Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup -9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -050 10650 Image: Combustible load, MJ/m2 (unsprinklered combustible load, MJ/m2 (unsprinklered combustible load, MJ/m2 (unsprinklered combustible load limit, MJ/m2 (unsprinklered combustible load limit, MJ/m2 (unsprinklered combustible load limit, MJ/m2 (unsprinklered combustible load limit, MJ/m2 (Some no radiological materials present Life safety: Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: (Complete burnout of all equipment and cables within this Fire Area affects no safety-related or safe shutdown divisional equipment; all safety divisions and both redundant trains A and B are operable. Manual firefighting: Property loss: Negligible Negligible Negligible			9A.2-21		Safety-re	lated divisional equipment or cables:	none	
9A.2-23 Surrounded by fire barriers rated at: Except: 3 hours basemat (non-rated) Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup -9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -9350 6194 None Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Complete burnout of installed fire extinguishing equipment, impact of fire upon: None None Complete burnout of all equipment and cables within this Fire Area affects no safety-related or safe shutdown: Complete burnout of all equipment and cables within this Fire Area affects no safety-related or safe shutdown divisional equipment; all safety divisions and both redundant trains A and B are operable. Manual firefighting: Property loss: Negligible Regligible None None			9A.2-22		Nonsafety-related red	undant trains or equipment or cables:	none	
Except: basemat (non-rated) Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup Primary Backup -9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -0050 Image ligible Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None, no radiological materials present Complete burnout of all equipment; all safety divisions and both redundant trains A and B are operable. Manual firefighting: Property loss: None, no radiological materior doors Negligible None, no radiological metrior doors Negligible None None None			9A.2-23	Surrounded by fire barriers rated at: 3 hours				
Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup Primary Backup -9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -0.050 -0.050 -0.050 -0.050 -0.050 -0.050 -0.050 10650 -0.050 -0.050 -0.050 -0.050 -0.050 -0.050 10650 -0.050 -0.050 -0.050 -0.050 -0.050 -0.050 10650 -0.050 -0.050 -0.050 -0.050 -0.050 -0.050 10650 -0.050 -0.050 -0.050 -0.050 -0.050 -0.050 10650 -0.050 -0.050 -0.050 -0.050 -0.050 -0.050 10650 -0.050 -0.050 -0.050 -0.050 -0.050 -0.050 Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None None, no radiological materials present -0.050 -0.050 -0.050 <tr< td=""><td></td><td></td><td></td><td></td><td colspan="4">Except: basemat (non-rated)</td></tr<>					Except: basemat (non-rated)			
Consisting of the following Rooms: Fire Detection Fire Suppression EL Room # Potential Combustibles Primary Backup Primary Backup -9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -2350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers 10650 Image: State				-		-		
EL Room # Potential Combustibles Primary Backup -9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -2350 -2350 -0 Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers -2350 -0 -0 -0 -0 -0 -0 -050 -0 -0 -0 -0 -0 -0 -050 -0 -0 -0 -0 -0 -0 -0 -050 -0 <td colspan="3">Consisting of the following Rooms:</td> <td>Fire De</td> <td>etection</td> <td colspan="3">Fire Suppression</td>	Consisting of the following Rooms:			Fire De	etection	Fire Suppression		
-9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers 4650 -2350 at each landing) Hose racks ABC fire extinguishers 10650	EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-9350 6194 None Area-wide ionization Manual pulls (outside stairwell at each landing) Hose racks ABC fire extinguishers 4650 10650 Image: Comparison of the state of the st								
-2350 (outside stairwell at each landing) 4650 at each landing) 10650 Image: Image	-9350	6194	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
4650 at each landing) 10650 at each landing)	-2350	4			(outside stairwell			
10650 Image:	4650	4			at each landing)			
negligible Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Complete burnout of all equipment and cables within this Fire Area affects no safety-related or safe shutdown divisional equipment; all safety divisions and both redundant trains A and B are operable. Nanual firefighting: Access via exterior and interior doors Property loss: Negligible	10650	İ						
negligible 700Anticipated combustible load, MJ/m2 Unsprinklered combustible load limit, MJ/m2Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown:Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation:NoneComplete burnout of all equipment and cables within this Fire Area affects no safety-related or safe shutdown divisional equipment; all safety divisions and both redundant trains A and B are operable.Nanual firefighting: Property loss:Access via exterior and interior doors Property loss:Area operable.		l						
negligible Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: 700 Unsprinklered combustible load limit, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Complete burnout of all equipment and cables within this Fire Area affects no safety-related or safe shutdown divisional equipment; all safety divisions and both redundant trains A and B are operable. Assuming inferighting: Access via exterior and interior doors Property loss: Property loss: Negligible None				1				
700 Unsprinklered combustible load limit, MJ/m2 function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None Plant operation: None, no radiological materials present Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via exterior and interior doors Property loss: Negligible			negligible	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not	
Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None Radiological release: None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Property loss: Negligible			700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on sate shutdown:	
Assuming operation of installed fire extinguishing equipment, impact of fire upon: Plant operation: None Radiological release: None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via exterior and interior doors Property loss: Negligible						Complete burnout of all equipme	nt and cables within	
Plant operation: None Radiological release: None, no radiological materials present Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via exterior and interior doors Property loss: Negligible	Assuming c	peration of ins	stalled fire extinguishing ec	upment, impact of fire upo	n:	this Fire Area affects no safety-re	elated or safe shutdown	
Radiological release: None, no radiological materials present redundant trains A and B are operable. Life safety: Travel distance limits to EXITs meet NFPA 101 redundant trains A and B are operable. Manual firefighting: Access via exterior and interior doors redundant trains A and B are operable. Property loss: Negligible Redundant trains A and B are operable.	P	lant operation:	None			divisional equipment; all safety d	ivisions and both	
Life safety: Travel distance limits to EXITs meet NFPA 101 Manual firefighting: Access via exterior and interior doors Property loss: Negligible	Radiol	ogical release:	None, no radiological ma	iterials present		redundant trains A and B are op	erable.	
Manual firefighting: Access via exterior and interior doors Property loss: Negligible		Life safety:	Travel distance limits to	EXITs meet NFPA 101				
Property loss: Negligible	Manua	al firefighting:	Access via exterior and i	nterior doors				
		Property loss:	Negligible					

	Fire Area:	F6270	Description:	Radwaste Control R	.oom Complex			
	Building:	Radwaste	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804				
		DCD Fig:		Bui	lding code occupancy classification:	В		
		9A.2-21	1	Electrical classification: none				
		9A.2-22		Safety-rel	ated divisional equipment or cables:	none		
				Nonsafety-related redu	indant trains or equipment or cables:	none		
			Surrounded b	by fire barriers rated at:	: 3 hours			
					elevator doors (1.5 hr rated);			
				Except	: basemat for 6287 (non-rated)			
			interio	or fire barriers rated at:	1 hours			
			-	between	rooms 6270 and 6287			
Consisting	of the followin	g Rooms:	Fire Detect	tion	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-2350	6270	Electrical equipment	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks		
		Cable insulation		(outside stairwells	_	(in nearby stairwells)		
		Class A combustibles		at each landing)				
	6270	Cable insulation	1		Hose racks	ABC fire		
	below floor				(in nearby stairwells)	extinguishers		
	6287	Electrical equipment	1					
		Cable insulation						
4650	6382	Class A combustibles						
		< 1400	Anticipated combustible load,	MJ/m2	Assuming automatic & manual FP	equipment does not		
		1400	Unsprinklered combustible loa	ıd limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
			-		Complete burnout of all equipme	ent and cables within		
Assuming	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upon:	-	this Fire Area affects no safety-re	elated or safe shutdown		
Plant operation: None; restoration requir			ed before handling radwaste		divisional equipment; all safety d	ivisions and both		
-	*	Radiological release: None, no radiological ma		aterials present				
Radio	logical release:	None, no radiological ma	aterials present		redundant trains A and B are ope	erable.		
Radio	logical release: Life safety:	None, no radiological ma Travel distance limits to	aterials present EXITs meet NFPA 101		redundant trains A and B are op	erable.		
Radio	logical release: Life safety: al firefighting:	None, no radiological ma Travel distance limits to Access via stairwells	aterials present EXITs meet NFPA 101		redundant trains A and B are op	erable.		
Radio	logical release: Life safety: al firefighting: Property loss:	None, no radiological ma Travel distance limits to Access via stairwells Moderate	aterials present EXITs meet NFPA 101	•	redundant trains A and B are op	erable.		

	Fire Area:	F6290	Description:	Stairwell E			
	Building:	Radwaste	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804		
		DCD Fig:	-	Bu	ilding code occupancy classification:	F-1	
		9A.2-21		Electrical classification: none			
		9A.2-22		Safety-re	elated divisional equipment or cables:	none	
		9A.2-23		Nonsafety-related red	undant trains or equipment or cables:	none	
			Surround	ed by fire barriers rated a	t: 3 hours		
				Excep	t: basemat (non-rated)		
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-2350 4650	6290	None	Area-wide ionization	Manual pulls (outside stairwell at each landing)	Hose racks	ABC fire extinguishers	
	<u> </u>	negligible 700	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 2 load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:	
Assuming operation of installed fire extinguishing equipment, imp Plant operation: None Radiological release: None, no radiological materials press Life safety: Travel distance limits to EXITs meet Manual firefighting: Access via exterior and interior door Property loss: Negligible			uipment, impact of fire upon aterials present EXITs meet NFPA 101 nterior doors	n:	Complete burnout of all equipme this Fire Area affects no safety-re divisional equipment; all safety d redundant trains A and B are op	ent and cables within elated or safe shutdown livisions and both erable.	

	Fire Area:	: F6301	Description:	HVAC Equipment		
	Building:	: Radwaste	Applicable codes:	IBC; Reg Guide 1.18	9; NFPA 10, 14, 72, 90A, 101, 804	
		DCD Fig:	-	Buil	lding code occupancy classification:	F-1
		9A.2-22]		Electrical classification:	none
		9A.2-23		Safety-rel:	ated divisional equipment or cables:	none
			1	Nonsafety-related redu	ndant trains or equipment or cables:	none
			Surrounded b	by fire barriers rated at:	3 hours	
				Except:	elevator doors (1.5 hr rated)	
Consisting	of the followin	ng Rooms:	Fire Detect	tion	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
	Γ	\Box				
4650	6380	Class IIIB lubricants	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers
		Cable insulation		(outside stairwells		
10650	6480	Filter media		at each landing)		
	6490	None	•			
	1	1		1		
		< 700 700	Anticipated combustible load, Unsprinklered combustible loa	MJ/m2 ad limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:
Assuming o P Radiol Manu	operation of in lant operation: logical release: Life safety al firefighting: Property loss	stalled fire extinguishing eq None; restoration require None, no radiological ma Travel distance limits to Access via stairwells Minor	uipment, impact of fire upon: ed before handling radwaste aterials present EXITs meet NFPA 101		Complete burnout of all equipme this Fire Area affects no safety-re divisional equipment; all safety d redundant trains A and B are ope	nt and cables within alated or safe shutdown ivisions and both erable.

Table 9A.5-6, Electrical Building

	Fire Area:	F5100	Description:	Corridors			
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 90A, 101, 804		
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-25	Electrical classification: none				
		9A.2-26	Safety-related divisional equipment or cables: none				
		9A.2-27		Nonsafety-related rec	dundant trains or equipment or cables:	none	
		9A.2-28	Surround	ed by fire barriers rated a	at: 3 hours		
		9A.2-29		Excep	ot: basemat (non-rated); elevator de	oors (1.5 hr rated)	
		9A.2-30					
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	5292B	Insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
	5100, 5101,	Cable insulation		(at EXITs)	(in nearby stairwells)		
	5102, 5189						
9080	5200						
13000	5300						
	5391						
18000	5400						
22000	5500						
27000	5600						
30000	5703						
			-				
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fir	e on safe shutdown:	
					Complete burnout of all equipment and cables within		
Assuming o	operation of ins	stalled fire extinguishing eq	juipment, impact of fire upo	n:	this Fire Area affects no safety-r	elated or safe shutdown	
Plant operation: None					divisional equipment; all safety divisions and both		
Radiol	ogical release:	None, no radiological ma	aterials present		redundant trains A and B are operable.		
	Life safety:	Travel distance limits to	EXITS meet NFPA 101				
Manu	al firefighting:	Access via doors					
	Property loss:	Negligible					

	Fire Area:	F5150	Description:	Batteries A		
1	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 14, 72, 101, 804	
		DCD Fig:	- -	Buil	Iding code occupancy classification:	F-1 per IBC 307.9.11
		9A.2-25			Electrical classification:	none
		9A.2-26		Safety-rela	ated divisional equipment or cables:	none
				Nonsafety-related redu	ndant trains or equipment or cables:	Α
			Surround	ed by fire barriers rated at:	3 hours	
				Except:	basemat (non-rated)	
Consisting	of the followin	ng Rooms:	Fire De	tection	Fire Suppress	sion
	.	Potential Combustibles	D :		.	
EL	Room #	and Hazards	Primary	Васкир	Primary	Backup
4650	5150	3420 L of battery acid	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks
1		Battery cell cases	1	(outside stairwell)		(in nearby stairwell)
1		Cable insulation	1			
 '	5151	11,040 L of battery actu	1			
· ·		Battery cell cases	1			
1	5152	Cable insulation	1			
· ·	5152	13,080 L of Dattery actu	1			
·		Battery cell cases	1	l		
'		Cable Insulation	łł			
 		<u>_ </u>	L L			
		< 1400	Anticipated combustible lo	ad MI/m2	Assuming automatic & manual FP	equipment does not
		1400	Unsprinklered combustible	load limit MJ/m2	function impact of design basis fire	e on safe shutdown:
		1100	Onoprimatorea como acons	10uu mmit, 1117,	Complete burnout of all equipme	ont and cables within
Assuming (operation of in	stalled fire extinguishing eq	nipment. impact of fire upor	n.	this Fire Area affects only redund	lant train A on-site
P	lant operation:	None			nower and related equipment and	d no safety-related
Radiol	logical release:	None, no radiological ma	terials present	l	equipment: all safety divisions an	d redundant train B on-
	Life safety	Travel distance limits to	EXITs meet NFPA 101		site power and related equipment	t are operable.
Manu	al firefighting	Access via doors			F	· · · · · · · · · · · · · · · · · · ·
	Property loss	Moderate				
	1 2					

	Fire Area	1: F5154	Description: Diesel Generator A				
	Building	g: Electrical	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 13, 16, 24, 37, 72, 101, 80	4	
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-25			Electrical classification:	none	
		9A.2-26		Safety-r	elated divisional equipment or cables:	none	
		9A.2-27		Nonsafety-related rec	lundant trains or equipment or cables:	Α	
			Surrounde	ed by fire barriers rated a	at: 3 hours		
				Excer	pt: basemat (non-rated)		
			•				
Consisting	of the followi	ing Rooms:	Fire Det	tection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	5154	Cable insulation Class IIIB lubricants Class II fuel oil	Cross-zoned UV/IR and spot heat	Suppression flowswitch	Preaction foam sprinkler 10.2 L/min per m2 over entire area	Hydrants	
		> 700	Anticipated combustible log	ad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		/00		Ioad IIIIII, wij/III2	function, impact of design basis fire on safe shutdown:		
Accumina	anaration of i	notellad fire autinewishing as	winment impect of fire upor		this Fire Area officite only reduce	ant and cables within	
Assuming C	Plant operation	istalled file extiliguishing eq	upment, impact of the upon	1.	this Fire Area affects only require newer and valated equipment on	Jant train A on-site	
Padial	logical release	None no radiological me	power and related equipment and b			J IIO Salety-felateu	
Kauloi	I ife safet	Traval distance limits to	aterials present equipment; all safety divisions and redundant tra			a redundant train D on-	
Manu	ual firefighting	Access via doors	EATTS meet NFT A 101		she power and related equipment	t are operable.	
Ivianu	Droperty los	. Access via 40015					
	Property 1055	5. Significant					

	Fire Area:	. F5255	Description:	Day Tan <u>k A</u>		
1	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 13, 15, 16, 24, 30, 37, 72,	101, 804
		DCD Fig:	-	Bui	Iding code occupancy classification:	F-1
1		9A.2-26	1		Electrical classification:	none
1		9A.2-27	1	Safety-rel	ated divisional equipment or cables:	none
			1	Nonsafety-related redu	indant trains or equipment or cables:	A
1			Surround	ed by fire barriers rated at:	3 hours	
			1	Except:	none	
Consisting	of the followir	ng Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
8000	5255	Cable insulation	Cross-zoned UV/IR	Suppression	Preaction foam deluge	Hydrants
		Class IIIB lubricants	and spot heat	flowswitch	16.3 L/min per m2	1
1		20,000L Class II fuel oil	1	1		
 '			ا	l	. ′	l
 '			<u>ر المحمد الم</u>	L	′	L
1		> 700		1 1/1	A main and the second ED	in month do no mot
1		> /00	Anticipated compustible io	ad, MJ/m2	Assuming automatic & manual FF	equipment does not
		/00	Unsprinklered combustible	: load limit, MJ/m2	function, impact of design basis fire on safe shutdown:	
		11. 1 Con - tin mighing an	·		Complete burnout of all equipme	nt and cables within
Assuming (operation of ins	stalled fire extinguishing equ	inpment, impact of fire upor	n: I	this Fire Area affects only redund	lant train A on-site
r Dadia	lant operation.	None	· · · · · · · · · · · · · · · · · · ·	1	power and related equipment and	I no safety-related
Kadioi	logical release:	None, no radiological mai	aterials present equipment; all safety divisions and redundant train			d redundant train B on-
Мали	Life safety.	Travel distance minus to r	SXIIs meet NFPA 101	1	site power and related equipment	i are operable.
Manu	al firefighting.	Access via doors	J	1		
	Property loss:	. Moderate	J	I		
4						

	Fire Area:	F5156	Description:	D-G Electrical Equipm	ient A			
	Building	Electrical	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 24, 72, 101, 804			
		DCD Fig:		Building code occupancy classification: F-1				
		9A.2-25	1		Electrical classification:	none		
		9A.2-26		Safety-r	elated divisional equipment or cables:	none		
				Nonsafety-related rec	dundant trains or equipment or cables:	Α		
			Surrounded by fire barriers rated at: 3 hours					
				Excep	ot: basemat (non-rated)			
			-					
Consisting of the following Rooms:		Fire De	etection	Fire Suppres	sion			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
4650	5156	Electrical equipment	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hydrants		
		Cable insulation		(at EXITs)				
			_					
		< 1400	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP equipment does not			
		1400	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:			
					Complete burnout of all equipme	ent and cables within		
Assuming	operation of in	stalled fire extinguishing ec	uipment, impact of fire upo	n:	this Fire Area affects only redundant train A on-site			
P	Plant operation:	None			power and related equipment an	d no safety-related		
Radio	logical release:	None, no radiological ma	aterials present		equipment; all safety divisions ar	ıd redundant train B on-		
Life safety: Travel distance limits to			EXITs meet NFPA 101		site power and related equipmen	t are operable.		
Manu	al firefighting	Access via doors						
	Property loss	: Moderate						

	Fire Area:	F5160	Description:	Batteries B		
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 75, 101, 804	
		DCD Fig:	-	Bui	lding code occupancy classification:	F-1 per IBC 307.9.11
		9A.2-25			Electrical classification:	none
		9A.2-26		Safety-rel	ated divisional equipment or cables:	none
				Nonsafety-related redu	ndant trains or equipment or cables:	В
			Surround	ed by fire barriers rated at:	3 hours	
				Except:	basemat (non-rated)	
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion
	D #	Potential Combustibles	D.		D.'	
EL	Room #	and Hazards	Primary	Васкир	Primary	Васкир
1670	71 (0					
4650	5160	3420 L of battery acid	Area-wide ionization	Manual pulls	CO2 fire extinguisners	Hose racks
		Battery cell cases	1	(outside stairweii)		(in nearby stairweii)
1	51(1	Cable insulation	1			
1	5101	Dattery coll cases	1			
l '		Battery cell cases	1			
l '	5162	Lable Insulation	1			
1	5102	Rattory coll cases	1			
l '		Cable inculation	1			
	ł					
'	<u> </u>	<u> </u>	L I			l
		< 1400	Anticipated combustible lo	ad. MJ/m2	Assuming automatic & manual FP	eauipment does not
		1400	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:
1] - 1		Complete burnout of all equipme	ent and cables within
Assuming (operation of in-	stalled fire extinguishing eq	uipment, impact of fire upor	n:	this Fire Area affects only redund	dant train B on-site
Р	lant operation:	None			power and related equipment and	d no safety-related
Radiol	ogical release:	None, no radiological ma	terials present		equipment; all safety divisions an	d redundant train A on-
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		site power and related equipment	t are operable.
Manu	al firefighting:	Access via doors			-	-
1	Property loss:	Moderate				

	Fire Area	: F5164	Description:	Diesel Generator B			
	Building	: Electrical	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 13, 16, 24, 37, 72, 101, 804				
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-25	1		Electrical classification:	none	
		9A.2-26		Safety-r	elated divisional equipment or cables:	none	
		9A.2-27		Nonsafety-related red	dundant trains or equipment or cables:	В	
			Surrounde	ed by fire barriers rated	at: 3 hours		
				Exce	ot: basemat (non-rated)		
			-		· · · · · · · · · · · · · · · · · · ·		
Consisting	of the following	ng Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
				*		<u>^</u>	
4650	5164	Cable insulation	Cross-zoned UV/IR	Suppression	Preaction foam sprinkler	Hvdrants	
		Class IIIB lubricants	and spot heat	flowswitch	10.2 L/min per m2	J	
		Class II fuel oil			over entire area		
		> 700	Anticipated combustible lo	ad. MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	e load limit MJ/m2	function impact of design basis fire	e on safe shutdown.	
				10 00 111110, 1110, 111	Complete burnout of all equipme	ent and cables within	
Assuming	operation of in	stalled fire extinguishing ec	uipment impact of fire upor	n [.]	this Fire Area affects only redundant train B on-site		
P	Plant operation	· None			nower and related equipment and	d no safety-related	
Radio	logical release	· None, no radiological ma	equipment and related equipment and no safety-related			nd redundant train A on.	
L ife safety: Travel distance limits to			x EXITs meet NFPA 101 site newer and related equipment are operable				
Manu	al firefighting	Access via doors			site power and related equipment	t are operable.	
Ivitante	Property loss	Significant					
	roperty loss	. Bignineant			L		

	Fire Area:	F5265	Description: Day Tank B					
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 13, 15, 16, 24, 30, 37, 72,	101, 804		
		DCD Fig:	_	Bui	lding code occupancy classification:	F-1		
		9A.2-26	1		Electrical classification:	none		
		9A.2-27	1	Safety-rel	lated divisional equipment or cables:	none		
			1	Nonsafety-related redu	indant trains or equipment or cables:	В		
			Surround	ed by fire barriers rated at:	: 3 hours			
			1	Except	: none			
Consisting	of the followin	ig Rooms:	Fire De	tection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
	Τ							
8000	5265	Cable insulation Class IIIB lubricants 20,000L Class II fuel oil	Cross-zoned UV/IR and spot heat	Suppression flowswitch	Preaction foam deluge 16.3 L/min per m2	Hydrants		
	<u> </u>	> 700	Anticipated combustible load, MJ/m2		Assuming automatic & manual FP equipment does not			
Assuming o P Radio Manu	operation of ins Plant operation: logical release: Life safety: ual firefighting: Property loss:	700 stalled fire extinguishing equ None None, no radiological mai Travel distance limits to l Access via doors Moderate Moderate	unsprinklered combustible upment, impact of fire upor terials present EXITs meet NFPA 101	load limit, MJ/m2 n:	function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and equipment; all safety divisions an site power and related equipment	e on safe shutdown: ent and cables within dant train B on-site d no safety-related nd redundant train A on- t are operable.		

	Fire Area	Fire Area: F5166 Description: D-G Electrical Equipment B					
	Building	g: Electrical	Applicable codes:	IBC; Reg Guide 1.189;	; NFPA 10, 24, 72, 101, 804		
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-25	1		Electrical classification:	none	
		9A.2-26		Safety-r	related divisional equipment or cables:	none	
				Nonsafety-related rec	dundant trains or equipment or cables:	B	
			Surrounde	ed by fire barriers rated a	at: 3 hours		
				Excep	pt: basemat (non-rated)		
			-				
Consisting of the following Rooms:		Fire Det	tection	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	5166	Electrical equipment	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hydrants	
		Cable insulation		(at EXITs)			
		< 1400	Anticipated combustible loa	ad, MJ/m2	Assuming automatic & manual FP equipment does not		
		1400	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipment and cables within		
Assuming	operation of ir	istalled fire extinguishing ec	juipment, impact of fire upor	n:	this Fire Area affects only redune	dant train B on-site	
Р	Plant operation	a: None			power and related equipment an	d no safety-related	
Radiological release: None, no radiological materials present					equipment; all safety divisions ar	ıd redundant train A on	
Life safety: Travel distance limits to			EXITs meet NFPA 101		site power and related equipmen	t are operable.	
Manu	ual firefighting	: Access via doors					
	Property loss	: Moderate					

Fire Area: F5180		Description: Technical Support Center Complex					
Building: Electrical		Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 13, 14, 72, 90A, 101, 804; 28 CFR 36					
DCD Fig:			Building code occupancy classification: B				
9A.2-25			Electrical classification: none				
9A.2-26			Safety-related divisional equipment or cables: none				
9A.2-27			Nonsafety-related redundant trains or equipment or cables: none				
9A.2-28			Surrounded by fire barriers rated at: 3 hours				
9A.2-29			Except: basemat (non-rated)				
		9A.2-30					
		9A.2-31					
Consisting of the following Rooms:		Fire Detection		Fire Suppression			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	5180	Computer equipment	Suppression flowswitch	Manual nulls	Wat_ning sprinkler	Hose racks	
4050	5181A 5181B	Furniture	Suppression nowswitten	(at EXITs)	$4 1 \text{ L/min ner m}^2$	(in nearby stairwells)	
	5181C 5181D	Cable insulation		(at EAT 13)	-4.1 L/min pcr m2	(in itear by stari wens)	
	5187A 5187B	Class A combustibles			over most remote 140 m2		
	5183 5184	Transiant combustibles					
	5185	Transferit compustibles					
	5186A 5186R						
	5186C 5187						
	above ceiling	Insulation	Area-wide ionization		Class ABC fire extinguishers		
	5292A	Insulation	Thea while formzation		Class ADC Inc extinguishers		
< 700			Anticipated combustible load, MJ/m2		Assuming automatic & manual FP equipment does not		
700		Unsprinklered combustible load limit, MJ/m2		function, impact of design basis fire on safe shutdown:			
					Complete burnout of all equipme	ent and cables within	
Assuming operation of installed fire extinguishing equipment, impact of fire upon:					this Fire Area affects no safety-related or safe shutdown		
Plant operation: None		None			divisional equipment; all safety d	ivisions and both	
Radiological release:		None, no radiological materials present			redundant trains A and B are op	erable.	
Life safety:		Travel distance limits to EXITs meet NFPA 101			-		
Manual firefighting:		Access via doors					
	Property loss:	Minor					
Fire Area: F5188 Description				Fire Protection Equipr	nent		
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	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; NFPA 10, 13, 14, 15, 16, 72, 101, 804			
		DCD Fig:		Building code occupancy classification: F-1			
		9A.2-25	Electrical classification: none				
		9A.2-26		Safety-r	elated divisional equipment or cables:	none	
				Nonsafety-related rec	lundant trains or equipment or cables:	none	
			Surround	ed by fire barriers rated a	at: 3 hours		
				Excep	ot: basemat (non-rated)		
Consisting of the following Rooms:		Fire De	etection	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	5188	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
		Class IIIB lubricants		(at EXITs)	(in nearby stairwells)		
			-				
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	ent and cables within	
Assuming of	operation of ins	stalled fire extinguishing e	quipment, impact of fire upor	n:	this Fire Area affects no safety-r	elated or safe shutdown	
Р	lant operation:	None			divisional equipment; all safety of	livisions and both	
Radiol	ogical release:	None, no radiological m	aterials present		redundant trains A and B are op	erable.	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101				
Manu	al firefighting:	Access via door					
	Property loss:	Minor					

	Fire Area:	F5190	Description:	Description: Elevator A			
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804; ASME A	A17.1	
		DCD Fig:	_	Building code occupancy classification: F-1			
		9A.2-25	Electrical classification: none				
		9A.2-26	Safety-related divisional equipment or cables: none				
		9A.2-27	Nonsafety-related redundant trains or equipment or cables: none				
		9A.2-28	Surround	ed by fire barriers rated a	t: 3 hours		
		9A.2-29		Excep	t: basemat (non-rated); elevator do	oors (1.5 hr rated)	
		9A.2-30					
		9A.2-31					
Consisting of the following Rooms:			Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	5190	Class IIIB lubricants Cable insulation	Area-wide ionization	Manual pulls (outside Elev at each landing)	ABC fire extinguishers (outside Elev at each landing)	Hose racks (in nearby stairwell)	
30000	5701	Class IIIB lubricants Cable insulation Electrical equipment			CO2 fire extinguisher (outside room)		
		< 700	Anticipated combustible lo	ad MI/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	load limit MI/m2	function impact of design basis fire	e on safe shutdown.	
		100	Olispinikioida comoactici	1044 mmt, 100, m2	Complete burnout of all equipme	ent and cables within	
Assuming o	operation of ins	stalled fire extinguishing ec	uipment, impact of fire upo	n:	this Fire Area affects no safety-re	elated or safe shutdown	
P	lant operation:	None			divisional equipment: all safety d	ivisions and both	
Radiol	ogical release:	None, no radiological ma	aterials present		redundant trains A and B are on	erable.	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		redundant trains it and 2 are op-	ci ubic.	
Manua	al firefighting:	Access via stairwells and	hoistway doors				
	Property loss:	Negligible					
	110pen.j	1.088					

	Fire Area:	F5191	Description: Stairwell A					
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804			
		DCD Fig:		Building code occupancy classification: F-1				
		9A.2-25	Electrical classification: none					
		9A.2-26	Safety-related divisional equipment or cables: none					
		9A.2-27	Nonsafety-related redundant trains or equipment or cables: none					
		9A.2-28	Surrounded by fire barriers rated at: 3 hours					
		9A.2-29		Excep	t: basemat (non-rated); elevator de	oors (1.5 hr rated)		
		9A.2-30						
		9A.2-31						
Consisting	Consisting of the following Rooms:		Fire De	etection	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
4650	5191	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers		
9800				(outside stairwell				
13000				at each landing)				
18000								
22000								
27000								
30000								
			_					
		negligible	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP equipment does not			
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:			
					Complete burnout of all equipme	ent and cables within		
Assuming of	operation of ins	stalled fire extinguishing ec	uipment, impact of fire upor	n:	this Fire Area affects no safety-r	elated or safe shutdown		
Р	lant operation:	None			divisional equipment; all safety of	livisions and both		
Radiol	ogical release:	None, no radiological ma	aterials present		redundant trains A and B are op	erable.		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101					
Manu	al firefighting:	Access via exterior and i	nterior doors					
	Property loss:	Negligible						

	Fire Area:	F5192	Description:	Elevator B			
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804; ASME A	A17.1	
		DCD Fig:		Bu	ilding code occupancy classification:	F-1	
		9A.2-25			Electrical classification:	none	
		9A.2-26		Safety-re	elated divisional equipment or cables:	none	
		9A.2-27		Nonsafety-related red	undant trains or equipment or cables:	none	
		9A.2-28	Surround	ed by fire barriers rated a	t: 3 hours		
		9A.2-29		Excep	t: basemat (non-rated); elevator do	oors (1.5 hr rated)	
		9A.2-30					
		9A.2-31					
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	5192	Class IIIB lubricants Cable insulation	Area-wide ionization	Manual pulls (outside Elev at each landing)	ABC fire extinguishers (outside Elev at each landing)	Hose racks (in nearby stairwell)	
30000	5703	Class IIIB lubricants Cable insulation Electrical equipment			CO2 fire extinguisher (outside room)		
Assuming operation of installed fire extinguishing economic Plant operation: None Radiological release: None, no radiological matching: Life safety: Travel distance limits to Manual firefighting: Access via stairwells and Property loss: Negligible			Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo aterials present EXITs meet NFPA 101 hoistway doors	oad, MJ/m2 oaad limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects no safety-re divisional equipment; all safety d redundant trains A and B are ope	equipment does not e on safe shutdown: ent and cables within elated or safe shutdown livisions and both erable.	

	Fire Area:	F5193	Description: Stairwell B				
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804		
		DCD Fig:		Bu	ilding code occupancy classification:	F-1	
		9A.2-25	Electrical classification: none				
		9A.2-26	Safety-related divisional equipment or cables: none				
		9A.2-27		Nonsafety-related red	undant trains or equipment or cables:	none	
		9A.2-28	Surround	ed by fire barriers rated a	t: 3 hours		
		9A.2-29		Excep	t: basemat (non-rated)		
		9A.2-30					
		9A.2-31					
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	5193	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
9800				(outside stairwell			
13000				at each landing)			
18000							
22000							
27000	1						
30000	1						
	•					•	
		negligible	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fir	e on safe shutdown:	
				,	Complete burnout of all equipme	ent and cables within	
Assuming c	operation of ins	stalled fire extinguishing ec	uipment, impact of fire upor	n:	this Fire Area affects no safety-r	elated or safe shutdown	
P	lant operation:	None			divisional equipment; all safety of	livisions and both	
Radiol	logical release:	None, no radiological ma	aterials present		redundant trains A and B are on	erable.	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101				
Manu	al firefighting:	Access via exterior and i	nterior doors				
	Property loss:	Negligible					

Fire Area: F5194 Description: Stairwell C							
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 14, 72, 101, 804		
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-25	Electrical classification: none				
		9A.2-26		Safety-re	elated divisional equipment or cables:	none	
				Nonsafety-related red	undant trains or equipment or cables:	none	
			Surround	ed by fire barriers rated at	t: 3 hours		
				Except	t: basemat (non-rated)		
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-2000	5194	None	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
1300				(outside stairwell			
4650				at each landing)			
			-				
		negligible	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP equipment does not		
		700	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	ent and cables within	
Assuming o	operation of ins	stalled fire extinguishing eq	juipment, impact of fire upor	n:	this Fire Area affects no safety-re	elated or safe shutdown	
P	lant operation:	None			divisional equipment; all safety d	ivisions and both	
Radiol	ogical release:	None, no radiological ma	aterials present		redundant trains A and B are op	erable.	
Life safety: Travel distance limits to EXITs meet NFPA 101				1			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101				
Manua	Life safety: al firefighting:	Travel distance limits to Access via exterior and in	EXITs meet NFPA 101 nterior doors				
Manua	Life safety: al firefighting: Property loss:	Travel distance limits to Access via exterior and in Negligible	EXIT's meet NFPA 101 nterior doors				

	Fire Area:	F5250	Description: Lower Cable Spreading A				
	Building:	Electrical	Applicable codes: I	BC; Reg Guide 1.189;	NFPA 10, 13, 14, 72, 101, 804		
		DCD Fig:	_	Bı	uilding code occupancy classification:	F-1	
		9A.2-26	Electrical classification: none				
		9A.2-27		Safety-re	elated divisional equipment or cables:	none	
				Nonsafety-related red	lundant trains or equipment or cables:	Α	
			Surrounded	d by fire barriers rated a	at: 3 hours		
				Excep	ot: none		
			-				
Consisting	of the followin	g Rooms:	Fire Dete	ection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
9800	5250	Cable insulation	Suppression flowswitch	Manual pulls	Wet-pipe sprinkler	Hose racks	
				(at EXITs)	12.2 L/min per m2 over most	(in nearby stairwells)	
					remote 235 m2		
> 1400		-					
		> 1400	Anticipated combustible loa	d, MJ/m2	Assuming automatic & manual FP	equipment does not	
		> 1400 1400	Anticipated combustible loa Unsprinklered combustible l	d, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:	
		> 1400 1400	Anticipated combustible loa Unsprinklered combustible l	d, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme	equipment does not e on safe shutdown: ent and cables within	
Assuming o	operation of ins	> 1400 1400 stalled fire extinguishing ec	Anticipated combustible loa Unsprinklered combustible l juipment, impact of fire upon:	d, MJ/m2 load limit, MJ/m2 :	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only reduce	equipment does not e on safe shutdown: ent and cables within dant train A on-site and	
Assuming o	operation of inslant operation:	> 1400 1400 stalled fire extinguishing ec None	Anticipated combustible loa Unsprinklered combustible l uipment, impact of fire upon	d, MJ/m2 load limit, MJ/m2 :	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only reduce off-site power and related equipm	equipment does not e on safe shutdown: ent and cables within dant train A on-site and nent and no safety-	
Assuming o Pl Radiol	operation of ins lant operation: ogical release:	> 1400 1400 stalled fire extinguishing eco None None, no radiological ma	Anticipated combustible loa Unsprinklered combustible l uipment, impact of fire upon: aterials present	d, MJ/m2 load limit, MJ/m2 :	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund off-site power and related equipm related equipment; all safety divi	equipment does not e on safe shutdown: ent and cables within dant train A on-site and nent and no safety- sions and redundant	
Assuming c Pl Radiol	operation of ins lant operation: ogical release: Life safety:	> 1400 1400 stalled fire extinguishing ec None None, no radiological ma Travel distance limits to	Anticipated combustible loa Unsprinklered combustible l quipment, impact of fire upon aterials present EXITs meet NFPA 101	d, MJ/m2 load limit, MJ/m2 :	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund off-site power and related equipm related equipment; all safety divi train B on-site and off-site power	equipment does not e on safe shutdown: ent and cables within dant train A on-site and nent and no safety- sions and redundant and related equipment	
Assuming c Pi Radiol Manua	operation of ins lant operation: ogical release: Life safety: al firefighting:	> 1400 1400 stalled fire extinguishing eco None None, no radiological ma Travel distance limits to Access via doors	Anticipated combustible loa Unsprinklered combustible l quipment, impact of fire upon aterials present EXITs meet NFPA 101	d, MJ/m2 load limit, MJ/m2 :	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only reduce off-site power and related equipment; all safety divite train B on-site and off-site power are operable.	equipment does not e on safe shutdown: ent and cables within dant train A on-site and nent and no safety- sions and redundant and related equipment	
Assuming c P Radiol Manua	operation of ins lant operation: logical release: Life safety: al firefighting: Property loss:	> 1400 1400 stalled fire extinguishing economic None None, no radiological ma Travel distance limits to Access via doors Moderate	Anticipated combustible loa Unsprinklered combustible l quipment, impact of fire upon aterials present EXITs meet NFPA 101	d, MJ/m2 load limit, MJ/m2 :	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only reduce off-site power and related equipm related equipment; all safety divi train B on-site and off-site power are operable.	equipment does not e on safe shutdown: ent and cables within dant train A on-site and nent and no safety- sions and redundant and related equipment	

	Fire Area:	F5260	Description: Lower Cable Spreading B				
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 13, 14, 72, 101, 804		
		DCD Fig:	<u> </u>	Buil	lding code occupancy classification:	F-1	
		9A.2-26		Electrical classification: none			
		9A.2-27		Safety-rela	ated divisional equipment or cables:	none	
				Nonsafety-related redur	ndant trains or equipment or cables:	В	
			Surrounde	ed by fire barriers rated at:	3 hours		
				Except:	none		
Consisting	of the followin	g Rooms:	Fire De	tection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	5163	Cable insulation	Suppression flowswitch	Manual pulls	Wet-pipe sprinkler	Hose racks	
9800	5260			(at EXITs)	12.2 L/min per m2 over most	(in nearby stairwells)	
9800	5260			(at EXITs)	12.2 L/min per m2 over most remote 235 m2	(in nearby stairwells)	
9800	5260			(at EXITs)	12.2 L/min per m2 over most remote 235 m2	(in nearby stairwells)	
9800	5260			(at EXITs)	12.2 L/min per m2 over most remote 235 m2	(in nearby stairwells)	
9800	5260	> 1400	Anticipated combustible lo	(at EXITs) ad, MJ/m2	12.2 L/min per m2 over most remote 235 m2 Assuming automatic & manual FP	(in nearby stairwells) equipment does not	
9800	5260	> 1400 1400	Anticipated combustible lo	(at EXITs) ad, MJ/m2 load limit, MJ/m2	12.2 L/min per m2 over most remote 235 m2 Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:	
9800	5260	> 1400 1400	Anticipated combustible log	(at EXITs) ad, MJ/m2 load limit, MJ/m2	12.2 L/min per m2 over most remote 235 m2 Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme	equipment does not e on safe shutdown: ent and cables within	
9800	5260	> 1400 1400 talled fire extinguishing eq	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upor	(at EXITs) ad, MJ/m2 load limit, MJ/m2 n:	12.2 L/min per m2 over most remote 235 m2 Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only reduced	(in nearby stairwells) equipment does not e on safe shutdown: ent and cables within dant train B on-site and	
9800 Assuming c	5260	> 1400 1400 stalled fire extinguishing eq None	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upor	(at EXITs) ad, MJ/m2 load limit, MJ/m2 n:	12.2 L/min per m2 over most remote 235 m2 Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund off-site power and related equipme	(in nearby stairwells) equipment does not e on safe shutdown: ent and cables within dant train B on-site and nent and no safety-	
9800 Assuming c Pl Radiol	5260 operation of ins lant operation: ogical release:	> 1400 1400 stalled fire extinguishing eq None None, no radiological ma	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upor terials present	(at EXITs) ad, MJ/m2 load limit, MJ/m2 n:	12.2 L/min per m2 over most remote 235 m2 Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund off-site power and related equipm related equipment; all safety division	(in nearby stairwells) equipment does not e on safe shutdown: ent and cables within dant train B on-site and nent and no safety- isions and redundant	
9800 Assuming c Pl Radiol	5260 operation of ins lant operation: ogical release: Life safety:	> 1400 1400 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upor iterials present EXITs meet NFPA 101	(at EXITs) ad, MJ/m2 load limit, MJ/m2 n:	12.2 L/min per m2 over most remote 235 m2 Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund off-site power and related equipm related equipment; all safety divis train A on-site and off-site power	(in nearby stairwells) equipment does not e on safe shutdown: ent and cables within dant train B on-site and nent and no safety- isions and redundant and related equipment	
9800 Assuming c P Radiol Manua	5260 operation of ins lant operation: ogical release: Life safety: al firefighting:	> 1400 1400 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to Access via doors	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upor iterials present EXITs meet NFPA 101	(at EXITs) ad, MJ/m2 load limit, MJ/m2 n:	12.2 L/min per m2 over most remote 235 m2 Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund off-site power and related equipm related equipment; all safety divis train A on-site and off-site power are operable.	(in nearby stairwells) equipment does not e on safe shutdown: ent and cables within dant train B on-site and nent and no safety- isions and redundant and related equipment	
9800 Assuming c P Radiol Manua	5260 operation of ins lant operation: ogical release: Life safety: al firefighting: Property loss:	> 1400 1400 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to Access via doors Moderate	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upor iterials present EXITs meet NFPA 101	(at EXITs) ad, MJ/m2 load limit, MJ/m2 n:	12.2 L/min per m2 over most remote 235 m2 Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund off-site power and related equipm related equipment; all safety divis train A on-site and off-site power are operable.	(in nearby stairwells) equipment does not e on safe shutdown: ent and cables within dant train B on-site and nent and no safety- sions and redundant and related equipment	

	Fire Area:	F5301	Description: Battery C				
	Building	Electrical	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804				
		DCD Fig:		Building code occupancy classification: F-1 per IBC 307.9.11			
		9A.2-27	Electrical classification: none				
		9A.2-28		Safety-re	elated divisional equipment or cables:	none	
				Nonsafety-related red	undant trains or equipment or cables:	С	
			Surround	ed by fire barriers rated a	t: 3 hours		
				Excep	t: none		
Consisting of the following Rooms:		Fire De	etection	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
13000	5301	5520 L of battery acid	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks	
		Battery cell cases		(outside stairwell)		(in nearby stairwell)	
		Cable insulation					
			-				
		< 1400	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP equipment does not		
		1400	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	ent and cables within	
Assuming of	operation of in	stalled fire extinguishing ed	juipment, impact of fire upor	n:	this Fire Area affects no safety-related or safe shutdown		
Р	lant operation:	None			divisional equipment; all safety d	livisions and both	
Radiol	logical release:	None, no radiological ma	aterials present		redundant trains A and B are op	erable.	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101				
Manu	al firefighting:	Access via doors					
	Property loss	Moderate					

	Fire Area	: F5302	Description: Electrical Equipment C				
	Building	: Electrical	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804			
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-27	1		Electrical classification:	none	
		9A.2-28		Safety-re	lated divisional equipment or cables:	none	
				Nonsafety-related redu	undant trains or equipment or cables:	С	
			Surrounde	ed by fire barriers rated at	t: 3 hours		
				Except	t: none		
Consisting of the following Rooms:			Fire De	etection	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
13000	5302	Electrical equipment	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks	
		Cable insulation		(outside stairwell)		(in nearby stairwell)	
		< 1400	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		1400	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipment and cables within		
Assuming of	operation of in	istalled fire extinguishing ec	juipment, impact of fire upor	n:	this Fire Area affects no safety-re	elated or safe shutdown	
Р	lant operation	: None			divisional equipment; all safety d	livisions and both	
Radiological release: None, no radiological ma			aterials present redundant trains A and B are operable.				
	-						
	Life safety	Travel distance limits to	EXITs meet NFPA 101				
Manu	Life safety al firefighting	Travel distance limits to Access via doors	EXITs meet NFPA 101				
Manu	Life safety al firefighting Property loss	 Travel distance limits to Access via doors Moderate 	EXITs meet NFPA 101				

	Fire Area:	Sire Area: F5303 Description: Electronic Equipment					
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804		
		DCD Fig:	- -	Bui	lding code occupancy classification:	F-1	
		9A.2-27	Electrical classification: none				
		9A.2-28		Safety-rel	ated divisional equipment or cables:	none	
				Nonsafety-related redu	ndant trains or equipment or cables:	none	
			Surround	ed by fire barriers rated at:	3 hours		
				Except	none		
Consisting of the following Rooms:			Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
13000	5303	Cable insulation	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks	
	below floor			(outside stairwell)		(in nearby stairwell)	
13400	5303	Electrical equipment					
		Cable insulation					
			1				
		< 1400	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		1400	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	ent and cables within	
Assuming	operation of ins	stalled fire extinguishing eo	uipment, impact of fire upor	n:	this Fire Area affects no safety-re	elated or safe shutdown	
Ч –	Plant operation:	None			divisional equipment; all safety d	ivisions and both	
Radio	logical release:	None, no radiological ma	iterials present		redundant trains A and B are ope	erable.	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101				
Manu	ual firefighting:	Access via doors					
	Property loss:	Moderate					

	Fire Area:	F5350	Description: Lower Electrical Equipment A					
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; I	NFPA 10, 14, 72, 101, 804			
		DCD Fig:	Building code occupancy classification: F-1					
		9A.2-27	1	Electrical classification: none				
		9A.2-28		Safety-re	lated divisional equipment or cables:	none		
				Nonsafety-related redu	undant trains or equipment or cables:	Α		
			Surrounde	ed by fire barriers rated at	:: 3 hours			
				Except	:: none			
					-			
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
13000	5350	Electrical equipment	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks		
		Cable insulation		(outside stairwell)		(in nearby stairwell)		
			-					
		< 1400	Anticipated combustible los	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		1400	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire on safe shutdown:			
					Complete burnout of all equipme	ent and cables within		
Assuming of	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upor	n:	this Fire Area affects only redune	dant train A on-site and		
Р	'lant operation:	None			off-site power and related equipr	nent and no safety-		
Radio	logical release:	None, no radiological ma	aterials present		related equipment; all safety divi	sions and redundant		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		train B on-site and off-site power	and related equipment		
Manu	al firefighting:	Access via doors			are operable.			
	Property loss:	Significant						

	Fire Area:	F5360	Description: Lower Electrical Equipment B						
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 14, 72, 101, 804				
		DCD Fig:	-	Bui	ilding code occupancy classification:	F-1			
		9A.2-27			Electrical classification:	none			
9A.2-28 Safety-related divisional equipment or cables: none									
				Nonsafety-related redu	andant trains or equipment or cables:	В			
			Surrounde	ed by fire barriers rated at	: 3 hours				
				Except	: none				
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppres	sion			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup			
13000	5360	Electrical equipment	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks			
		Cable insulation		(outside stairwell)		(in nearby stairwell)			
			-						
		< 1400	Anticipated combustible los	ad, MJ/m2	Assuming automatic & manual FP equipment does not				
		1400	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fir	e on safe shutdown:			
					Complete burnout of all equipme	ent and cables within			
Assuming of	operation of ins	stalled fire extinguishing eo	juipment, impact of fire upor	n:	this Fire Area affects only redune	dant train B on-site and			
Р	'lant operation:	None			off-site power and related equipr	nent and no safety-			
Radio	logical release:	None, no radiological ma	aterials present related equipment; all safety divisions and redundar			sions and redundant			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		train A on-site and off-site power	and related equipment			
Manu	al firefighting:	Access via doors			are operable.				
	Property loss:	Significant							

Building: Electrical Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 13, 14, 72, 101, 804 DCD Fig: Building code occupancy classification: F-1 9A.2-28 Electrical classification: none 9A.2-29 Safety-related divisional equipment or cables: none	
DCD Fig: Building code occupancy classification: F-1 9A.2-28 Electrical classification: none 9A.2-29 Safety-related divisional equipment or cables: none	
9A.2-28 Electrical classification: none 9A.2-29 Safety-related divisional equipment or cables: none	
9A 2-29 Safety-related divisional equipment or cables: none	/
JA.2-27 Safety-related divisional equipment of eaoles.	
Nonsafety-related redundant trains or equipment or cables: A	'
Surrounded by fire barriers rated at: 3 hours	'
Except: none	'
	!
Consisting of the following Rooms: Fire Detection Fire Suppression	P
ELRoom #Potential CombustiblesPrimaryBackupPrimaryBackup	up
46505153Cable insulationSuppression flowswitchManual pullsWet-pipe sprinklerHose is	acks
18000 5450 (at EXITs) 12.2 L/min per m2 over most (in nearby finder)	stairwells)
remote 235 m2	
> 1400 Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment do	es not
1400 Unsprinklered combustible load limit, MJ/m2 function, impact of design basis fire on safe shute	iown:
Complete burnout of all equipment and cables	within
Assuming operation of installed fire extinguishing equipment, impact of fire upon: this Fire Area affects only redundant train A	n-site and
Plant operation: None off-site power and related equipment and no s	afety-
Radiological release: None, no radiological materials present related equipment; all safety divisions and red	undant
Life safety: Travel distance limits to EXITs meet NFPA 101 train B on-site and off-site power and related	quipment
Manual firefighting: Access via doors are operable.	
Property loss: Moderate	

	Fire Area:	F5460	Description: Upper Cable Spreading B					
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 13, 14, 72, 101, 804			
		DCD Fig:	Building code occupancy classification: F-1					
		9A.2-28	Electrical classification: none					
		9A.2-29		Safety-re	elated divisional equipment or cables:	none		
				Nonsafety-related red	undant trains or equipment or cables:	B		
			Surrounde	ed by fire barriers rated a	t: 3 hours			
				Excep	t: none			
			<u> </u>					
Consisting of	of the followin	ig Rooms:	Fire De	tection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
18000	5460	Cable insulation	Suppression flowswitch	Manual pulls	Wet-pipe sprinkler	Hose racks		
	ł			(at EVITa)	12.2 I /min now m2 over most	(in nearby stairwalls)		
	Į			(at EATTS)	12.2 L/min per m2 over most	(III IIear by stair wens)		
				(at EATTS)	remote 235 m2	(in near by starr wens)		
				(at EATTS)	remote 235 m2	(in nearby stan wens)		
					remote 235 m2			
		> 1400	Anticipated combustible loa	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		> 1400 1400	Anticipated combustible loa Unsprinklered combustible	ad, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:		
		> 1400	Anticipated combustible loa Unsprinklered combustible	ad, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown: ent and cables within		
Assuming o	peration of ins	> 1400 1400 stalled fire extinguishing ec	Anticipated combustible loa Unsprinklered combustible uipment, impact of fire upor	ad, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund	equipment does not e on safe shutdown: ent and cables within dant train B on-site and		
Assuming o	operation of instant operation:	> 1400 1400 stalled fire extinguishing ec None	Anticipated combustible loa Unsprinklered combustible uipment, impact of fire upor	ad, MJ/m2 load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund off-site power and related equipment	equipment does not e on safe shutdown: ent and cables within dant train B on-site and nent and no safety-		
Assuming o Pl Radiolo	operation of ins lant operation: ogical release:	> 1400 1400 stalled fire extinguishing eco None None, no radiological ma	Anticipated combustible loa Unsprinklered combustible uipment, impact of fire upor iterials present	ad, MJ/m2 load limit, MJ/m2 1:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund off-site power and related equipm related equipment; all safety divi	equipment does not e on safe shutdown: ent and cables within dant train B on-site and nent and no safety- sions and redundant		
Assuming o Pl Radiol	operation of ins lant operation: ogical release: Life safety:	> 1400 1400 stalled fire extinguishing eco None None, no radiological ma Travel distance limits to	Anticipated combustible loa Unsprinklered combustible uipment, impact of fire upor aterials present EXITs meet NFPA 101	ad, MJ/m2 load limit, MJ/m2 1:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund off-site power and related equipm related equipment; all safety divi train A on-site and off-site power	equipment does not e on safe shutdown: ent and cables within dant train B on-site and nent and no safety- sions and redundant and related equipment		
Assuming o Pl Radiol Manua	operation of ins lant operation: ogical release: Life safety: al firefighting:	> 1400 1400 stalled fire extinguishing ec None None, no radiological ma Travel distance limits to Access via doors	Anticipated combustible loa Unsprinklered combustible uipment, impact of fire upor aterials present EXITs meet NFPA 101	ad, MJ/m2 load limit, MJ/m2 1:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund off-site power and related equipm related equipment; all safety divit train A on-site and off-site power are operable.	equipment does not e on safe shutdown: ent and cables within dant train B on-site and nent and no safety- sions and redundant and related equipment		
Assuming o Pl Radiol Manua	operation of ins lant operation: ogical release: Life safety: al firefighting: Property loss:	> 1400 1400 stalled fire extinguishing eco None None, no radiological ma Travel distance limits to Access via doors Moderate	Anticipated combustible loa Unsprinklered combustible uipment, impact of fire upor aterials present EXITs meet NFPA 101	ad, MJ/m2 load limit, MJ/m2 1:	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund off-site power and related equipm related equipment; all safety divi train A on-site and off-site power are operable.	equipment does not e on safe shutdown: ent and cables within dant train B on-site and nent and no safety- sions and redundant and related equipment		

	Fire Area:	F5550	Description: Upper Electrical Equipment A						
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; M	NFPA 10, 14, 72, 101, 804				
		DCD Fig:	-	Bui	Ilding code occupancy classification:	F-1			
		9A.2-29]	Electrical classification: none					
9A.2-30 Safety-related divisional equipment or cables					none				
				Nonsafety-related redu	undant trains or equipment or cables:	Α			
			Surrounde	ed by fire barriers rated at	2 3 hours				
				Except	.: none				
Consisting	of the followin	ig Rooms:	Fire De	tection	Fire Suppress	sion			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup			
22000	5550	Electrical equipment	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks			
		Cable insulation		(outside stairwell)		(in nearby stairwell)			
			-						
		< 1400	Anticipated combustible loa	ad, MJ/m2	Assuming automatic & manual FP equipment does not				
		1400	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:			
					Complete burnout of all equipme	ent and cables within			
Assuming	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upor	n:	this Fire Area affects only redund	dant train A on-site and			
P	Plant operation:	None			off-site power and related equipm	nent and no safety-			
Radio	logical release:	None, no radiological ma	aterials present related equipment; all safety divisions and redundant			sions and redundant			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		train B on-site and off-site power	and related equipment			
Manu	al firefighting:	Access via doors			are operable.				
	Property loss:	Significant							

	Fire Area:	F5560	Description: Upper Electrical Equipment B						
	Building:	Electrical	Applicable codes:	IBC; Reg Guide 1.189; I	NFPA 10, 14, 72, 101, 804				
		DCD Fig:	-	Bui	ilding code occupancy classification:	F-1			
		9A.2-29	1		Electrical classification:	none			
	9A.2-30 Safety-related divisional equipment or cable					none			
				Nonsafety-related redu	undant trains or equipment or cables:	В			
			Surrounde	ed by fire barriers rated at	a bours				
				Except	.: none				
Consisting	of the followin	ig Rooms:	Fire De	tection	Fire Suppress	sion			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup			
22000	5560	Electrical equipment	Area-wide ionization	Manual pulls	CO2 fire extinguishers	Hose racks			
		Cable insulation		(outside stairwell)		(in nearby stairwell)			
			7						
		< 1400	Anticipated combustible los	ad, MJ/m2	Assuming automatic & manual FP equipment does not				
		1400	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:			
					Complete burnout of all equipme	ent and cables within			
Assuming	operation of ins	stalled fire extinguishing eq	juipment, impact of fire upor	n:	this Fire Area affects only redund	dant train B on-site and			
P	'lant operation:	None			off-site power and related equipm	nent and no safety-			
Radio	logical release:	None, no radiological ma	aterials present related equipment; all safety divisions and redundan			sions and redundant			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101 train A on-site and off-site power and related equipmen						
Manu	al firefighting:	Access via doors			are operable.				
	Property loss:	Significant							

	Fire Area:	F5650	Description: HVAC Equipment A					
	Building:	Electrical	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 15, 72, 90A, 101, 804				
		DCD Fig:	-	Building code occupancy classification: F-1				
		9A.2-25		Electrical classification: none				
		9A.2-26		Safety-related divisional equipment or cables: none				
		9A.2-27		Nonsafety-related redu	undant trains or equipment or cables:	A		
		9A.2-28	Surround	ed by fire barriers rated at	t: 3 hours			
		9A.2-29		Except	t: none			
		9A.2-30						
		9A.2-31						
		·	•					
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
4650	5290A,	Class IIIB lubricants	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers		
	5291A	Cable insulation		(outside stairwell	(at stairwells)			
27000	5650, 5651,	Filter media		at each landing)				
	5652, 5653	Insulation						
	Charcoal	Charcoal	HVAC temperature		Internal manual spray	Hose racks		
	Filter in		indication			(at stairwells)		
	5653							
	5055							
	5055							
	5055							
	3035	< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
	3035	< 700 700	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 9 load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:		
	3035	< 700 700	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipme	equipment does not e on safe shutdown: ent and cables within		
Assuming of	operation of ins	<700 700 3talled fire extinguishing eq	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo	pad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipme this Fire Area results in loss of or	equipment does not e on safe shutdown: ent and cables within nly redundant train A		
Assuming o	operation of inslant operation:	700 700 stalled fire extinguishing eq None	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo	pad, MJ/m2 9 load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipment this Fire Area results in loss of or equipment; all safety divisions a	equipment does not e on safe shutdown: ent and cables within nly redundant train A nd redundant train B		
Assuming o P Radiol	operation of ins lant operation: ogical release:	700 700 stalled fire extinguishing eq None None, no radiological ma	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo terials present	pad, MJ/m2 9 load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipment this Fire Area results in loss of or equipment; all safety divisions and are unaffected by fire and are op	equipment does not e on safe shutdown: ent and cables within nly redundant train A nd redundant train B erable.		
Assuming o P Radiol	operation of ins lant operation: logical release: Life safety:	700 700 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo terials present EXITs meet NFPA 101	pad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipment this Fire Area results in loss of or equipment; all safety divisions a are unaffected by fire and are op	equipment does not e on safe shutdown: ent and cables within nly redundant train A nd redundant train B erable.		
Assuming o P Radiol Manu	operation of ins lant operation: logical release: Life safety: al firefighting:	<700 700 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to Access via inteior doors	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo iterials present EXITs meet NFPA 101	pad, MJ/m2 > load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipment this Fire Area results in loss of or equipment; all safety divisions and are unaffected by fire and are op	equipment does not e on safe shutdown: ent and cables within nly redundant train A nd redundant train B erable.		
Assuming o P Radiol Manu	operation of ins lant operation: logical release: Life safety: al firefighting: Property loss:	<700 700 stalled fire extinguishing eq None None, no radiological ma Travel distance limits to Access via inteior doors Moderate	Anticipated combustible lo Unsprinklered combustible uipment, impact of fire upo iterials present EXITs meet NFPA 101	pad, MJ/m2 e load limit, MJ/m2 n:	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipment this Fire Area results in loss of or equipment; all safety divisions and are unaffected by fire and are op	equipment does not e on safe shutdown: ent and cables within nly redundant train A nd redundant train B erable.		

	Fire Area:	F5660	Description: HVAC Equipment B					
	Building:	Electrical	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 15, 72, 90A, 101, 804				
		DCD Fig:	_	Building code occupancy classification: F-1				
		9A.2-25	Electrical classification: none					
		9A.2-26	Safety-related divisional equipment or cables: none					
		9A.2-27		Nonsafety-related red	undant trains or equipment or cables:	В		
		9A.2-28	Surround	led by fire barriers rated a	t: 3 hours			
		9A.2-29		Except	t: none			
		9A.2-30						
		9A.2-31						
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
4650	5290B,	Class IIIB lubricants	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers		
	5291B	Cable insulation		(outside stairwell	(at stairwells)	_		
27000	5660, 5661,	Filter media		at each landing)				
	5662, 5663	Insulation		0,				
	Charcoal	Charcoal	HVAC temperature		Internal manual spray	Hose racks		
	Filter		indication			(at stairwells)		
	-			-				
		< 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		700	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fir	e on safe shutdown:		
			_		Complete burnout of all equipme	ent and cables within		
Assuming		stallad fina autin aviahing as	winnent immedt of fins van	n.	this Fire Area results in loss of o	alv rodundant train B		
Plant operation: None			juipment, impact of fife upo	equipment: all safety divisions and redund				
F	operation of ins Plant operation:	None	juipment, impact of fire upo		equipment; all safety divisions a	nd redundant train A		
F Radio	operation of ins Plant operation: logical release:	None None, no radiological ma	aterials present		equipment; all safety divisions a are unaffected by fire and are on	nd redundant train A erable.		
F Radio	operation of ins Plant operation: logical release: Life safety:	None None, no radiological ma Travel distance limits to	aterials present EXITs meet NFPA 101		equipment; all safety divisions a are unaffected by fire and are op	nd redundant train A erable.		
F Radio Manu	operation of ins Plant operation: logical release: Life safety: al firefighting:	None None, no radiological ma Travel distance limits to Access via inteior doors	aterials present EXITs meet NFPA 101		equipment; all safety divisions a are unaffected by fire and are op	nd redundant train A erable.		
F Radio Manu	operation of in: Plant operation: logical release: Life safety: ial firefighting: Property loss:	None None, no radiological ma Travel distance limits to Access via inteior doors Moderate	aterials present EXITs meet NFPA 101		equipment; all safety divisions a are unaffected by fire and are op	nd redundant train A erable.		

Table 9A.5-7, Yard

	Fire Area:	F4201	Description:	Lube Oil Storage				
	Building:	Yard	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 13, 15, 16, 24, 30, 804				
		DCD Fig:		Bu	ilding code occupancy classification:	U per IBC 312.1		
		9A.2-33	Electrical classification: none					
				Safety-re	lated divisional equipment or cables:	none		
				Nonsafety-related red	undant trains or equipment or cables:	none		
			Surround	ed by fire barriers rated a	t: none			
			-	Except	t: none			
Consisting	of the followir	ig Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
4650	Lube Oil	191,000L Class IIIB	Suppression	Lube Oil system	Dry-pilot foam deluge	Hydrants		
	Storage	lubricating oil	flowswitch	instrumentation	12.2 L/min per m2			
		> 700	Anticipated combustible lo	oad, MJ/m2	Assuming automatic & manual FP equipment does not			
		N/A	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
					Complete burnout of all equipme	nt and cables within		
Assuming of	operation of in:	stalled fire extinguishing ec	juipment, impact of fire upo	n:	this Fire Area affects no safety-re	lated or safe shutdown		
Р	lant operation:	None; restoration requir	ed before LO outage		divisional equipment; all safety d	ivisions and both		
Radio	logical release:	None, no radiological ma	aterials present		redundant trains A and B are ope	erable.		
	Life safety:	. N/A						
Manu	al firefighting:	Access from open north	side					
	Property loss	Moderate						
-	1 2							

Design Control Document/Tier 2

Fire Area: F4202 Description: Hydrogen Storage							
	Building	Yard	Applicable codes:	IBC; Reg Guide 1.18	89; NFPA 10, 24, 50A, 72, 497, 804		
		DCD Fig:		Bui	lding code occupancy classification:	U per IBC 312.1	
		9A.2-33			Electrical classification:	Class I Div 2 Group B	
		Safety-related divisional equipment or cables: none					
				Nonsafety-related redu	indant trains or equipment or cables:	none	
			Surrounded b	by fire barriers rated at	none		
				Except	none		
Consisting	of the followin	ng Rooms:	Fire Detect	tion	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	Hydrogen	860 m3 hydrogen	H2 system	Manual pull	Hydrant	ABC fire	
	Storage		instrumentation	(outside hazard)		extinguishers	
			-				
		> 700	Anticipated combustible load,	MJ/m2	Assuming automatic & manual FP equipment does not		
		N/A	Unsprinklered combustible loa	ad limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	ent and cables within	
Assuming	operation of in	stalled fire extinguishing eq	uipment, impact of fire upon:	-	this Fire Area affects no safety-re	elated or safe shutdown	
Р	lant operation	Turbine power reduction	n (due to loss of H2 makeup)		divisional equipment; all safety d	livisions and both	
Radio	logical release	None, no radiological ma	iterials present		redundant trains A and B are op	erable.	
	Life safety	N/A					
Manu	al firefighting	Access all around					
					-		
	Property loss	Moderate					

	Fire Area:	F4251	F4251 Description: A Feedpump ASD Transformer					
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189; N	IFPA 10, 24, 804			
		DCD Fig:		Bui	lding code occupancy classification:	U		
		9A.2-13			Electrical classification:	none		
			Safety-related divisional equipment or cables: none					
				Nonsafety-related redu	ndant trains or equipment or cables:	none		
			Surround	ed by fire barriers rated at:	3 hours			
				Except:	basemat (non-rated); north side	(open); top (open)		
					•			
consisting of	of the following	Rooms:	Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
4650	ASD A	< 4000 L Class IIIA	Transformer	None	Hydrants	CO2 fire		
	Transformer	insulating mineral oil	instrumentation			extinguishers		
		(~15 MVA)						
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		N/A	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire on safe shutdown:			
					Complete burnout of all equipme	ent and cables within		
Assuming of	operation of insta	alled fire extinguishing eq	uipment, impact of fire upor	n:	this Fire Area affects no safety-related or safe shutdown			
	Plant operation:	None (turbine operates	at 100% w/ 3 FW pumps)		divisional equipment; all safety d	ivisions and both		
Radi	ological release:	None, no radiological m	aterials present		redundant trains A and B are ope	erable.		
	Life Safety:	N/A						
Man	nual firefighting:	Access via open north si	ide					
	Property loss:	Moderate						

	Fire Area:	F4252	4252 Description: C Feedpump ASD Transformer					
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 10, 24, 804			
		DCD Fig:		Bui	lding code occupancy classification:	U		
		9A.2-13			Electrical classification:	none		
			Safety-related divisional equipment or cables: none					
				Nonsafety-related redu	ndant trains or equipment or cables:	none		
			Surround	led by fire barriers rated at:	3 hours			
				Except:	basemat (non-rated); north side	(open); top (open)		
·		D	E. D					
consisting o	of the following	Rooms:	Fire De	etection	Fire Suppress	Sion		
EL	Room #	Potential Combustibles	Primary	Васкир	Primary	Васкир		
4650	ASD C	< 4000 L Class IIIA	Transformer	None	Hydrants	CO2 fire		
	Transformer	insulating mineral oil	instrumentation			extinguishers		
		(~15 MVA)						
			1					
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not		
		N/A	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
					Complete burnout of all equipme	ent and cables within		
Assuming o	operation of insta	alled fire extinguishing eq	uipment, impact of fire upor	n: I	this Fire Area affects no safety-related or safe shutdown			
	Plant operation:	None (turbine operates	at 100% w/ 3 FW pumps)		divisional equipment; all safety d	ivisions and both		
Radi	ological release:	None, no radiological m	aterials present		redundant trains A and B are op	erable.		
	Life Safety:	N/A						
Man	nual firefighting:	Access via open north si	ide					
	Property loss:	Moderate						

	Fire Area: F4261 Description: B Feedpump ASD Transformer					
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189; N	VFPA 10, 24, 804	
		DCD Fig:		Bui	lding code occupancy classification:	U
		9A.2-13			Electrical classification:	none
	Safety-related divisional equipment or cables: none					none
				Nonsafety-related redu	ndant trains or equipment or cables:	none
			Surround	led by fire barriers rated at:	3 hours	
				Except:	basemat (non-rated); north side	(open); top (open)
					-	
consisting of	of the following	Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
4650	ASD B	< 4000 L Class IIIA	Transformer	None	Hydrants	CO2 fire
	Transformer	insulating mineral oil	instrumentation			extinguishers
		(~15 MVA)				
			1			
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not
		N/A	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire on safe shutdown:	
					Complete burnout of all equipme	nt and cables within
Assuming of	operation of insta	alled fire extinguishing eq	uipment, impact of fire upor	n:	this Fire Area affects no safety-re	lated or safe shutdown
	Plant operation:	None (turbine operates	at 100% w/ 3 FW pumps)		divisional equipment; all safety d	ivisions and both
Radio	ological release:	None, no radiological m	aterials present		redundant trains A and B are ope	erable.
	Life Safety:	N/A				
Man	ual firefighting:	Access via open north si	ide			
	Property loss:	Moderate				

	Fire Area:	F4262	Description: D Feedpump ASD Transformer				
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189	9; NFPA 10, 24, 804		
		DCD Fig:	•	E	Building code occupancy classification:	U	
		9A.2-13	Electrical classification: none				
				Safety-	related divisional equipment or cables:	none	
				Nonsafety-related re	edundant trains or equipment or cables:	none	
			Surrounded by fire barriers rated at: 3 hours				
			Except: basemat (non-rated); north side (open); top (open)				
consisting	of the following	Rooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	ASD D	< 4000 L Class IIIA	Transformer	None	Hydrants	CO2 fire	
	Transformer	insulating mineral oil	instrumentation			extinguishers	
		(~15 MVA)					
			1				
		< 700	Anticipated combustible los	ad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		N/A	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:	
					Complete burnout of all equipme	ent and cables within	
Assuming	operation of insta	alled fire extinguishing eq	uipment, impact of fire upor	n:	this Fire Area affects no safety-re	elated or safe shutdown	
	Plant operation:	None (turbine operates	at 100% w/ 3 FW pumps)		divisional equipment; all safety d	livisions and both	
Radi	ological release:	None, no radiological m	aterials present		redundant trains A and B are op	erable.	
	Life Safety:	N/A					
Mar	nual firefighting:	Access via open north si	ide				
	Property loss:	Moderate					

	Fire Area:	F4271	Description:	Phase A Main Transform	ner	
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 15, 24, 804	
		DCD Fig:		Bui	ilding code occupancy classification:	U
		9A.2-13	Electrical classification: none			
		9A.2-14		Safety-rel	lated divisional equipment or cables:	none
				Nonsafety-related redu	andant trains or equipment or cables:	none
			Surround	led by fire barriers rated at:	3 hours	
				Except:	basemat (non-rated); north side (open); top (open)
Consisting o	of the following Ro	ooms:	Fire De	tection	Fire Suppress	ion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
4650	Main	>18,900L Class IIIA	Dry-pilot heat	Transformer	Dry-pilot deluge	Hydrants
	Transformer A	insulating mineral oil	around transformer	instrumentation	10.2 L/min per m2	
		(~625 MVA)			on all surfaces	
			-			
		> 700	Anticipated combustible loa	d, MJ/m2	Assuming automatic & manual FP e	equipment does not
		N/A	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	on safe shutdown:
		1.6 1			Complete burnout of all equipmen	nt and cables within this
Assuming of	peration of installe	a fire extinguishing equipm	hent, impact of fire upon:		Fire Area affects no safety-related	l or safe shutdown
р	Plant operation:	Turbine trip; outage req	uired to replace MT W/ ST		divisional equipment; all safety di	visions and both
Ка	diological release:	None, no radiological ma	iterials present		redundant trains A and B are ope	rable.
			-			
٦.4	· · · · · · · · · · · · · · · · · · ·					
М	anual firefighting:	Access via open north sid	le			

	Fire Area	F4272	Description	Phase R Main Transform	ar		
	Building:	Vord	Applicable codes:	IBC: Dog Cuido 1 180: N	IEDA 15 24 804		
	Dunung.		Applicable codes.	IDC, Keg Guide 1.189, N	ilding and a commence classification.	TT	
		DCD Fig:	7	Bu	fiding code occupancy classification:	U	
		9A.2-13	Electrical classification: none				
		9A.2-14		Safety-re	lated divisional equipment or cables:	none	
				Nonsafety-related redu	undant trains or equipment or cables:	none	
			Surrounded by fire barriers rated at: 3 hours				
				Except	basemat (non-rated); north side ((open); top (open)	
			_				
Consisting	of the following Ro	ooms:	Fire De	tection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
				•		-	
4650	Main	>18.900L Class IIIA	Dry-pilot heat	Transformer	Dry-nilot deluge	Hydrants	
1000	Transformer B	insulating mineral oil	around transformer	instrumentation	10.2 L/min ner m2		
		moulating minutal vii		mou unchtation			
		(625 MVA)			on all surfaces		
		(~625 MVA)			on all surfaces		
		(~625 MVA)			on all surfaces		
		(~625 MVA) > 700	Anticipated combustible los	4)/I/m2	on all surfaces		
		(~625 MVA)	Anticipated combustible loa	d, MJ/m2	Assuming automatic & manual FP e	equipment does not	
		(~625 MVA) > 700 N/A	Anticipated combustible loa Unsprinklered combustible l	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire	equipment does not on safe shutdown:	
		(~625 MVA) > 700 N/A	Anticipated combustible loa Unsprinklered combustible l	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipment	equipment does not on safe shutdown: nt and cables within this	
Assuming of	opperation of installe	(~625 MVA) > 700 N/A d fire extinguishing equipm	Anticipated combustible loa Unsprinklered combustible l nent, impact of fire upon:	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related	equipment does not on safe shutdown: nt and cables within this l or safe shutdown	
Assuming o	operation of installe Plant operation:	(~625 MVA) > 700 N/A d fire extinguishing equipm Turbine trip; outage requ	Anticipated combustible loa Unsprinklered combustible l nent, impact of fire upon: uired to replace MT w/ ST	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related divisional equipment; all safety di	equipment does not on safe shutdown: nt and cables within this l or safe shutdown ivisions and both	
Assuming c Ra	operation of installe Plant operation: adiological release:	(~625 MVA) > 700 N/A d fire extinguishing equipm Turbine trip; outage requ None, no radiological ma	Anticipated combustible loa Unsprinklered combustible l nent, impact of fire upon: uired to replace MT w/ ST terials present	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related divisional equipment; all safety di redundant trains A and B are ope	equipment does not on safe shutdown: nt and cables within this l or safe shutdown ivisions and both trable.	
Assuming c Ra	operation of installe Plant operation: adiological release: Life safety:	(~625 MVA) > 700 N/A d fire extinguishing equipm Turbine trip; outage requ None, no radiological ma N/A	Anticipated combustible loa Unsprinklered combustible l nent, impact of fire upon: uired to replace MT w/ ST terials present	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related divisional equipment; all safety di redundant trains A and B are ope	equipment does not on safe shutdown: nt and cables within this l or safe shutdown ivisions and both trable.	
Assuming c Ra N	operation of installe Plant operation: adiological release: Life safety: Aanual firefighting:	(~625 MVA) > 700 N/A d fire extinguishing equipm Turbine trip; outage requ None, no radiological ma N/A Access via open north sid	Anticipated combustible loa Unsprinklered combustible l nent, impact of fire upon: uired to replace MT w/ ST terials present	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related divisional equipment; all safety di redundant trains A and B are ope	equipment does not on safe shutdown: nt and cables within this l or safe shutdown ivisions and both trable.	
Assuming c Ra M	operation of installe Plant operation: adiological release: Life safety: Manual firefighting: Property loss:	(~625 MVA) > 700 N/A d fire extinguishing equipm Turbine trip; outage requ None, no radiological ma N/A Access via open north sid Significant	Anticipated combustible loa Unsprinklered combustible l nent, impact of fire upon: uired to replace MT w/ ST terials present	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related divisional equipment; all safety di redundant trains A and B are ope	equipment does not on safe shutdown: nt and cables within this l or safe shutdown ivisions and both trable.	

	Fire Area:	F4273	Description: Phase C Main Transformer			
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 15, 24, 804	
		DCD Fig:		Bui	lding code occupancy classification:	U
		9A.2-13	Electrical classification: none			
		9A.2-14		Safety-re	lated divisional equipment or cables:	none
				Nonsafety-related redu	indant trains or equipment or cables:	none
			Surround	led by fire barriers rated at:	3 hours	
				Except	basemat (non-rated); north side (open); top (open)
Consisting	of the following Ro	ooms:	Fire Det	tection	Fire Suppress	ion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
4650	Main	>18,900L Class IIIA	Dry-pilot heat	Transformer	Dry-pilot deluge	Hydrants
	Transformer C	insulating mineral oil	around transformer	instrumentation	10.2 L/min per m2	
		(~625 MVA)			on all surfaces	
			-			
		> 700				
		100	Anticipated combustible load	d, MJ/m2	Assuming automatic & manual FP e	equipment does not
		N/A	Unsprinklered combustible load	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire	equipment does not on safe shutdown:
		N/A	Unsprinklered combustible load	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen	equipment does not on safe shutdown: nt and cables within this
Assuming	operation of installe	N/A	Unsprinklered combustible load Unsprinklered combustible l	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related	equipment does not on safe shutdown: nt and cables within this l or safe shutdown
Assuming	operation of installe Plant operation:	N/A d fire extinguishing equipm Turbine trip; outage requ	Anticipated combustible loa Unsprinklered combustible l ent, impact of fire upon: uired to replace MT w/ ST	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related divisional equipment; all safety di	equipment does not on safe shutdown: nt and cables within this l or safe shutdown visions and both
Assuming o	operation of installe Plant operation: adiological release:	N/A d fire extinguishing equipm Turbine trip; outage required None, no radiological ma	Unsprinklered combustible load Unsprinklered combustible l tent, impact of fire upon: uired to replace MT w/ ST terials present	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related divisional equipment; all safety di redundant trains A and B are ope	equipment does not on safe shutdown: nt and cables within this l or safe shutdown visions and both rable.
Assuming o	operation of installe Plant operation: adiological release: Life safety:	N/A d fire extinguishing equipm Turbine trip; outage required None, no radiological ma N/A	Unsprinklered combustible load Unsprinklered combustible l nent, impact of fire upon: uired to replace MT w/ ST terials present	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related divisional equipment; all safety di redundant trains A and B are ope	equipment does not on safe shutdown: nt and cables within this l or safe shutdown visions and both rable.
Assuming o R	operation of installe Plant operation: adiological release: Life safety: Manual firefighting:	N/A d fire extinguishing equipm Turbine trip; outage required None, no radiological ma N/A Access via open north sid	Anticipated combustible load Unsprinklered combustible l aent, impact of fire upon: aired to replace MT w/ ST terials present	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related divisional equipment; all safety di redundant trains A and B are ope	equipment does not on safe shutdown: nt and cables within this l or safe shutdown visions and both rable.
Assuming o R M	operation of installe Plant operation: adiological release: Life safety: Manual firefighting: Property loss:	N/A d fire extinguishing equipm Turbine trip; outage req None, no radiological ma N/A Access via open north sid Significant	Anticipated combustible load Unsprinklered combustible l nent, impact of fire upon: uired to replace MT w/ ST terials present	d, MJ/m2 oad limit, MJ/m2	Assuming automatic & manual FP e function, impact of design basis fire Complete burnout of all equipmen Fire Area affects no safety-related divisional equipment; all safety di redundant trains A and B are ope	equipment does not on safe shutdown: at and cables within this l or safe shutdown visions and both rable.

	Fire Area:	F4274	Description:	Spare Main Transform	ner		
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 24, 804		
		DCD Fig:		В	uilding code occupancy classification:	U	
		9A.2-13	Electrical classification: none				
		9A.2-14	Safety-related divisional equipment or cables: none				
			Nonsafety-related redundant trains or equipment or cables: none				
			Surrounded by fire barriers rated at: 3 hours only on east side				
				Exce	ot: none		
Consisting of the following Rooms:		Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	Spare Main	none (transformer	None	None	Hydrants	ABC fire	
	Transformer	maintained dry)				extinguishers	
		(~625 MVA)					
			1			·	
		negligible	Anticipated combustible lo	bad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		N/A	Unsprinklered combustible	e load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:	
		1 C			Complete burnout of all equipme	nt and cables within	
Assuming C	Diant an anation	Name	nent, impact of fire upon:	1	this Fire Area affects no safety-re	lated or safe shutdown	
D	Plant operation:	None None no vodiological ma	4		divisional equipment; all safety d	ivisions and both	
Ka	L ife asfetsu	None, no radiological ma	iteriais present		redundant trains A and B are ope	erable.	
M	Life safety:	IN/A A agoss via all sidos Evon	at oast				
IV	Droperty loss	Modorato	u casi				
	FIODELLY IOSS.	widuerate					

	Fire Area:	F5157	Description:	Reserve Auxiliary Tran	sformer A		
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 15, 24, 804		
		DCD Fig:	-	Bu	ilding code occupancy classification:	U	
		9A.2-25	Electrical classification: none				
		9A.2-26	Safety-related divisional equipment or cables: none				
		9A.2-27		Nonsafety-related red	undant trains or equipment or cables:	A	
			Surrounded by fire barriers rated at: 3 hours				
			Except: basemat (non-rated); north side (open); top (open)				
Consisting of the following Rooms:		ooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	Reserve	>18,900L Class IIIA	Dry-pilot heat	Transformer	Dry-pilot deluge	Hydrants	
4	Auviliany	insulating minoral ail	around transformar	instrumentation	10.2 L/min nor m2		
•	Auxiliary	insulating inner at on	al oullu ti alisior mer	instrumentation	10.2 L/mm per m2		
	Transformer A	(~105 MVA)	around transformer		on all surfaces		
	Transformer A	(~105 MVA)			on all surfaces		
	Transformer A	(~105 MVA)			on all surfaces		
	Transformer A	(~105 MVA)	Anticipated combustible lo	pad, MJ/m2	Assuming automatic & manual FP	equipment does not	
	Transformer A	(~105 MVA) > 700 N/A	Anticipated combustible lo Unsprinklered combustible	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:	
	Transformer A	(~105 MVA) > 700 N/A	Anticipated combustible lo Unsprinklered combustible	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme	equipment does not e on safe shutdown: nt and cables within	
Assuming o	yperation of installe	<pre>/// Instracting initial of (~105 MVA)</pre> // > 700 // A // A // A // A // A // A // A //	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon:	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only reduce	equipment does not e on safe shutdown: nt and cables within lant train A off-site	
Assuming o	Deperation of installe Plant operation:	<pre>/// Instracting initial of (~105 MVA)</pre> // > 700 // A Instracting initial of the extinguishing equipred in the exting extinguishing e	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon:	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and	equipment does not e on safe shutdown: nt and cables within dant train A off-site d no safety-related	
Assuming c	Deperation of installe Plant operation: diological release:	A standard g inner at off (~105 MVA) > 700 N/A > 700 N/A > d fire extinguishing equipr None None, no radiological material	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: iterials present	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr	equipment does not e on safe shutdown: nt and cables within lant train A off-site d no safety-related ain A on-site power and	
Assuming c	pperation of installe Plant operation: adiological release: Life safety:	A stating inner at off (~105 MVA) > 700 N/A > d fire extinguishing equipr None None, no radiological ma N/A	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: iterials present	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundant	equipment does not e on safe shutdown: nt and cables within lant train A off-site I no safety-related ain A on-site power and tt train B equipment are	
Assuming (Ra M	Deperation of installe Plant operation: adiological release: Life safety: Ianual firefighting:	A starting initial of (~105 MVA) > 700 N/A None None, no radiological ma N/A Access via open north side	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: iterials present	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundant operable.	equipment does not e on safe shutdown: nt and cables within lant train A off-site I no safety-related rain A on-site power and at train B equipment are	
Assuming o Ra M	Deperation of installe Plant operation: adiological release: Life safety: fanual firefighting: Property loss:	A starting initial of a starting initial	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: iterials present	ad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundan operable.	equipment does not e on safe shutdown: nt and cables within lant train A off-site l no safety-related rain A on-site power and at train B equipment are	

	T ' A	T.#1.#0	D • • •		4		
File Alea: F5150			Description:	Description: Unit Auxiliary Transformer A			
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 15, 24, 804	-	
		DCD Fig:	_	Bui	lding code occupancy classification:	U	
		9A.2-25	Electrical classification: none				
		9A.2-26	Safety-related divisional equipment or cables: none				
		9A.2-27		Nonsafety-related redu	indant trains or equipment or cables:	Α	
			Surround	led by fire barriers rated at	3 hours	-	
			Except: basemat (non-rated); north side (open); top (open				
			• 	_	· · · · · · · · · · · · · · · · · · ·		
Consisting of the following Rooms:		poms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	Unit Auxiliary	>18,900L Class IIIA	Dry-pilot heat	Transformer	Dry-pilot deluge	Hydrants	
	Transformer A	insulating mineral oil	around transformer	instrumentation	10.2 L/min per m2		
		(~105 MVA)			on all surfaces		
		(~105 MVA)			on all surfaces		
		(~105 MVA)			on all surfaces		
		(~105 MVA)	Anticipated combustible lo	pad, MJ/m2	on all surfaces Assuming automatic & manual FP	equipment does not	
		(~105 MVA) > 700 N/A	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 e load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:	
		(~105 MVA) > 700 N/A	Anticipated combustible lo Unsprinklered combustible	pad, MJ/m2 e load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme	equipment does not e on safe shutdown: ent and cables within	
Assuming o	peration of installe	(~105 MVA) > 700 N/A 2d fire extinguishing equipm	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon:	pad, MJ/m2 2 load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only reduce	equipment does not e on safe shutdown: ent and cables within dant train A off-site	
Assuming c	peration of installe Plant operation:	(~105 MVA) > 700 N/A >d fire extinguishing equipn None	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon:	pad, MJ/m2 e load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund power and related equipment and	equipment does not e on safe shutdown: ent and cables within dant train A off-site d no safety-related	
Assuming c	operation of installe Plant operation: diological release:	(~105 MVA) > 700 N/A ed fire extinguishing equipn None None, no radiological ma	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: terials present	oad, MJ/m2 e load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund power and related equipment and equipment: all safety divisions. tr	equipment does not e on safe shutdown: int and cables within dant train A off-site d no safety-related rain A on-site power and	
Assuming c Ra	peration of installe Plant operation: diological release: Life safety:	(~105 MVA) > 700 N/A d fire extinguishing equipn None None, no radiological ma N/A	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: terials present	pad, MJ/m2 e load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundant	equipment does not e on safe shutdown: nt and cables within dant train A off-site d no safety-related rain A on-site power and to train B equipment are	
Assuming c Ra M	peration of installe Plant operation: idiological release: Life safety: anual firefighting:	(~105 MVA) > 700 N/A ed fire extinguishing equipn None None, no radiological ma N/A Access via open north sid	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: (terials present	oad, MJ/m2 e load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundant operable	equipment does not e on safe shutdown: nt and cables within dant train A off-site d no safety-related rain A on-site power and nt train B equipment are	
Assuming c Ra M	operation of installe Plant operation: idiological release: Life safety: anual firefighting: Property loss	(~105 MVA) > 700 N/A ed fire extinguishing equipm None None, no radiological ma N/A Access via open north sid Significant	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: terials present	pad, MJ/m2 e load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundant operable.	equipment does not e on safe shutdown: nt and cables within dant train A off-site d no safety-related rain A on-site power and tt train B equipment are	

	Fire Area:	F5159	Description:	Fuel Oil Storage A				
	Building:	. Yard	Applicable codes:	IBC; Reg Guide 1.189; N	NFPA 11, 16, 24, 30, 72, 804			
	-	DCD Fig:		Buil	Iding code occupancy classification:	U		
		9A.2-33	1	Electrical classification: none				
				Safety-rela	ated divisional equipment or cables:	none		
				Nonsafety-related redundant trains or equipment or cable				
			Surrounded by fire barriers rated at: none					
			•					
Consisting of the following Rooms:		Fire De	etection	Fire Suppress	sion			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
	<u> </u>				<u> </u>			
4650	Fuel Oil Tank A	~756,000L Class II fuel oil	Spot heat inside tank	UV/IR fire detection inside tank	Automatic foam surface cross- zoned deluge	Hydrants		
		<u> </u>	<u> </u> /		6.5 L/min per m2			
		<u> </u>	·		<u> </u>			
		> 700 N/A	Anticipated combustible lo Unsprinklered combustible	oad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:		
Assuming o P Radiol Manu	operation of ins 'lant operation: logical release: Life safety: al firefighting: Property loss	stalled fire extinguishing eq None None, no radiological ma N/A Access all around Moderate	uipment, impact of fire upo iterials present	n:	Complete burnout of all equipme this Fire Area affects only redund power and related equipment and equipment; all safety divisions an site power and related equipment	ent and cables within dant train A on-site d no safety-related id redundant train B on- t are operable.		

	Fire Area:	F5167	Description:	Reserve Auxiliary Tran	sformer B		
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189; I	NFPA 15, 24, 72, 804		
		DCD Fig:		Bu	ilding code occupancy classification:	U	
		9A.2-25	Electrical classification: none				
		9A.2-26	Safety-related divisional equipment or cables: none				
		9A.2-27		Nonsafety-related red	undant trains or equipment or cables:	B	
			Surrounded by fire barriers rated at: 3 hours				
			Except: basemat (non-rated); north side (open); top (open)				
Consisting of the following Rooms:		ooms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	Reserve	>18,900L Class IIIA	Dry-pilot heat	Transformer	Dry-pilot deluge	Hydrants	
	Auviliary	inculating minaral ail	around transformer	instrumontation	10.2 L/min nov m2		
	Auxiliary	insulating mineral on	around transformer	insti unicitation	10.2 L/mm per m2		
	Transformer B	(~105 MVA)	around transformer	instrumentation	on all surfaces		
	Transformer B	(~105 MVA)			on all surfaces		
	Transformer B	(~105 MVA)			on all surfaces		
	Transformer B	(~105 MVA) > 700	Anticipated combustible lo	pad, MJ/m2	Assuming automatic & manual FP	equipment does not	
	Transformer B	(~105 MVA) > 700 N/A	Anticipated combustible lo Unsprinklered combustible	pad, MJ/m2 bload limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown:	
	Transformer B	(~105 MVA) > 700 N/A	Anticipated combustible lo Unsprinklered combustible	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire	equipment does not e on safe shutdown: ent and cables within	
Assuming of	Transformer B	(~105 MVA) > 700 N/A 2d fire extinguishing equipr	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon:	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only reduced	equipment does not e on safe shutdown: ent and cables within dant train B off-site	
Assuming o	Deperation of installe Plant operation:	(~105 MVA) > 700 N/A 2d fire extinguishing equipr None	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon:	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and	equipment does not e on safe shutdown: ent and cables within dant train B off-site d no safety-related	
Assuming o	Deperation of installe Plant operation: udiological release:	A standard g inner at off (~105 MVA) > 700 N/A > d fire extinguishing equipr None None, no radiological ma	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: terials present	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr	equipment does not e on safe shutdown: ent and cables within dant train B off-site d no safety-related cain B on-site power and	
Assuming o Ra	operation of installe Plant operation: idiological release: Life safety:	A standard g inner at off (~105 MVA) (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA) A standard g inner at off (~105 MVA)	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: terials present	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundan	equipment does not e on safe shutdown: nt and cables within dant train B off-site d no safety-related rain B on-site power and nt train A equipment are	
Assuming o Ra M	pperation of installe Plant operation: adiological release: Life safety: Ianual firefighting:	A standard g inner at off (~105 MVA) > 700 N/A None None, no radiological ma N/A Access via open north side	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: terials present	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundan operable.	equipment does not e on safe shutdown: nt and cables within dant train B off-site d no safety-related rain B on-site power and nt train A equipment are	
Assuming o Ra M	pperation of installe Plant operation: adiological release: Life safety: Ianual firefighting: Property loss:	A standard g miner at off (~105 MVA) (~105 MVA) A standard g miner at off (~105 MVA) A	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: iterials present	pad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipment this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundan operable.	equipment does not e on safe shutdown: int and cables within dant train B off-site d no safety-related rain B on-site power and at train A equipment are	

	Fire Area:	F5168	Description:	Unit Auxiliary Transfor	mer B	_	
	Building:	Yard	Applicable codes:	IBC; Reg Guide 1.189; I	NFPA 15, 24, 72, 804		
		DCD Fig:	_	Bu	ilding code occupancy classification:	U	
		9A.2-25	Electrical classification: none				
		9A.2-26		Safety-re	lated divisional equipment or cables:	none	
		9A.2-27		Nonsafety-related red	undant trains or equipment or cables:	В	
			Surrounded by fire barriers rated at: 3 hours				
			Except: basemat (non-rated); north side (open); top (open)				
Consisting of the following Rooms:		boms:	Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	Unit Auxiliary	>18,900L Class IIIA	Dry-pilot heat	Transformer	Dry-pilot deluge	Hydrants	
	Transformer B	insulating mineral oil	around transformer	instrumentation	10.2 L/min per m2		
	1	(105 35374)		1			
		(~105 MVA)			on all surfaces		
		(~105 MVA)			on all surfaces		
		(~105 MVA)			on all surfaces		
		(~105 MVA) > 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP of	equipment does not	
		(~105 MVA) > 700 N/A	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP of function, impact of design basis fire	equipment does not e on safe shutdown:	
		(~105 MVA) > 700 N/A	Anticipated combustible lo Unsprinklered combustible	ad, MJ/m2 load limit, MJ/m2	Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipme	equipment does not e on safe shutdown: nt and cables within	
Assuming c	peration of installe	(~105 MVA) > 700 N/A 2d fire extinguishing equipr	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon:	ad, MJ/m2 load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund	equipment does not e on safe shutdown: nt and cables within lant train B off-site	
Assuming c	peration of installe Plant operation:	(~105 MVA) > 700 N/A ed fire extinguishing equipr None	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon:	ad, MJ/m2 load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and	equipment does not e on safe shutdown: nt and cables within lant train B off-site l no safety-related	
Assuming c Ra	operation of installe Plant operation: diological release:	(~105 MVA) > 700 N/A ed fire extinguishing equipr None None, no radiological ma	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: terials present	ead, MJ/m2 e load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr	equipment does not e on safe shutdown: nt and cables within lant train B off-site l no safety-related ain B on-site power and	
Assuming c Ra	pperation of installe Plant operation: diological release: Life safety:	<pre>(~105 MVA)</pre>	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: iterials present	ad, MJ/m2 9 load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundan	equipment does not e on safe shutdown: nt and cables within lant train B off-site l no safety-related ain B on-site power and tt train A equipment are	
Assuming c Ra M	operation of installe Plant operation: idiological release: Life safety: anual firefighting:	(~105 MVA) > 700 N/A > d fire extinguishing equipr None None, no radiological ma N/A Access via open north side	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: iterials present le	ad, MJ/m2 9 load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundan operable.	equipment does not e on safe shutdown: nt and cables within lant train B off-site d no safety-related rain B on-site power and tt train A equipment are	
Assuming c Ra M	operation of installe Plant operation: idiological release: Life safety: anual firefighting: Property loss:	(~105 MVA) > 700 N/A > d fire extinguishing equipr None None, no radiological ma N/A Access via open north sid Significant	Anticipated combustible lo Unsprinklered combustible nent, impact of fire upon: iterials present le	ad, MJ/m2 e load limit, MJ/m2	on all surfaces Assuming automatic & manual FP function, impact of design basis fire Complete burnout of all equipme this Fire Area affects only redund power and related equipment and equipment; all safety divisions, tr related equipment, and redundan operable.	equipment does not e on safe shutdown: nt and cables within lant train B off-site d no safety-related rain B on-site power and tt train A equipment are	

	Fire Area:	F5169	Description:	Fuel Oil Storage B			
	Building:	. Yard	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 11, 16, 24, 30, 72, 804		
		DCD Fig:	-	Buil	lding code occupancy classification:	U	
		9A.2-33			Electrical classification:	none	
				Safety-rel:	ated divisional equipment or cables:	none	
				Nonsafety-related redu	ndant trains or equipment or cables:	В	
			Surrounded by fire barriers rated at: none				
			Except: none				
Consisting of the following Rooms:		Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	Fuel Oil Tank B	~756,000L Class II fuel oil	Spot heat inside tank	UV/IR fire detection inside tank	Automatic foam surface cross- zoned deluge 6.5 L/min per m2	Hydrants	
		> 700 N/A	Anticipated combustible lo Unsprinklered combustible	oad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP of function, impact of design basis fire Complete burnout of all equipme	equipment does not e on safe shutdown: nt and cables within	
Assuming (operation of in	stalled fire extinguishing ec	juipment, impact of fire upo	on:	this Fire Area affects only redund	lant train B on-site	
~	1	<u> </u>	<u> </u>	1			
Plant operation: None			power and related equipment and	1 no safety-related			
P Radiol	Plant operation: logical release:	None None, no radiological ma	terials present		power and related equipment and equipment; all safety divisions an	d no safety-related d redundant train A on	
P Radiol	Plant operation: logical release: Life safety:	None None, no radiological ma N/A	iterials present		power and related equipment and equipment; all safety divisions an site power and related equipment	d no safety-related d redundant train A on t are operable.	
P Radiol Manu	Plant operation: logical release: Life safety: al firefighting:	None None, no radiological ma N/A Access all around	aterials present		power and related equipment and equipment; all safety divisions an site power and related equipment	d no safety-related Id redundant train A on t are operable.	
P Radiol Manu	Plant operation: logical release: Life safety: al firefighting: Property loss:	None None, no radiological ma N/A Access all around Moderate	aterials present		power and related equipment and equipment; all safety divisions an site power and related equipment	d no safety-related id redundant train A on t are operable.	

	Fire Area:	. F7100	Description:	Pump House			
	Building:	. Pump House	Applicable codes:	IBC; Reg Guide 1.189:	; NFPA 10, 14, 72, 90A, 101, 804		
		DCD Fig:	-	Build	ing code occupancy classification:	F-1	
		9A.2-33			Electrical classification:	none	
			Safety-related divisional equipment or cables: none				
			Nonsafety-related redundant trains or equipment or cables: none				
Surro				by fire barriers rated at:	to be determined during detaile	d design	
1]	Except:	to be determined during detaile	d design	
C	4 C 11		Eiro D.	· · ·	Eiro Summou		
Consisting of the following Rooms:		Pire De	tection	Fire Suppress	Sion D. Jawa		
EL	Koom #	Potential Combustibles	Primary	Васкир	Primary	Васкир	
	<u> </u>					4 D.C. C	
to be	to be	Class IIIB lubricants	Area wide ionization	Manual pulls (at	Hose racks	ABC fire	
determineu	determineu	Cable Insulation		EALLS)		extinguishers	
during	detailed			l			
design	design	'		l			
ucsign	ucsign	·	↓	·	ł ł		
		·	·		l		
		< 700	Anticipated combustible	load, MJ/m2	Assuming automatic & manual FI	P equipment does not	
		700	Unsprinklered combusti	ble load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
			_		Complete burnout of all equipm	ent and cables within	
Assuming ope	ration of instal	led fire extinguishing equi	ipment, impact of fire upo	on:	this Fire Area affects no safety-	related or safe	
Р	lant operation:	. Turbine trip		l	shutdown divisional equipment,	, but could affect	
Radiol	logical release:	. None, no radiological m	aterials present	I	redundant train A and B nonsat	fety-related	
	Life safety:	. to be determined during	g detailed design	1	equipment; all safety divisions a	ind both on-site and	
Manu	al firefighting:	. to be determined during	g detailed design	1	off-site power supplies A and B	are unaffected by fire	
	Property loss	to be determined durin	ng detailed design		and are operable.		
	Topenty 1055.	to be acter minea aut m	g detailed design	۹	and are operable.		
Building: Yard DCD Fig: Building code occupancy classification: 9A.2-33 Electrical classification: Safety-related divisional equipment or cables: no Surrounded by fire barriers rated at: 3 hours Except: exterior walls (non-rated), roof (non Electrical Combustibles Fire Detection Fire Suppression Fire Suppression	804 F-1 per IBC 307.9.5 none none on-rated) on Backup						
--	--	--					
DCD Fig: Building code occupancy classification: F- 9A.2-33 Electrical classification: no Safety-related divisional equipment or cables: no Nonsafety-related redundant trains or equipment or cables: no Surrounded by fire barriers rated at: 3 hours Except: exterior walls (non-rated), roof (non Electrical Classification: Fire Detection Fire Suppression Fire Suppression Fire Suppression Fire Suppression	F-1 per IBC 307.9.5 none none none on-rated) on Backup						
9A.2-33 Electrical classification: no Safety-related divisional equipment or cables: no Nonsafety-related redundant trains or equipment or cables: no Nonsafety-related redundant trains or equipment or cables: no Surrounded by fire barriers rated at: 3 hours Surrounded by fire barriers rated at: Except: exterior walls (non-rated), roof (non Consisting of the following Rooms: Fire Detection Fire Detection Fire Suppression Fire Suppression Primary	none none none on-rated) on Backup						
Safety-related divisional equipment or cables: no Nonsafety-related redundant trains or equipment or cables: no Surrounded by fire barriers rated at: 3 hours Except: exterior walls (non-rated), roof (non Consisting of the following Rooms: Fire Detection Fire Detection Fire Suppression Fire Detection Primary	none none on-rated) on Backup						
Consisting of the following Rooms: Fire Detection Fire Suppression Fire Detection Fire Suppression	on-rated)						
Surrounded by fire barriers rated at: 3 hours Except: Except: exterior walls (non-rated), roof (non Consisting of the following Rooms: Fire Detection Fire Suppression FI Room # Potential Combustibles Primary	on-rated) on Backup						
Except: exterior walls (non-rated), roof (non Consisting of the following Rooms: Fire Detection File Room # Potential Combustibles Primary Backup Primary	on-rated) on Backup						
Consisting of the following Rooms: Fire Detection Fire Suppression	on Backup						
Consisting of the following Rooms: Fire Detection Fire Suppression FI Room # Potential Combustibles Primary	ion Backup						
FL Room # Potential Combustibles Primary Backup Primary	Backup						
4650 7150 < 2500 L Class II fuel	Hydrant						
Class IIIB lubricants 12.2 L/min per m2							
Cable insulation over entire area							
> 700 Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equ	Assuming automatic & manual FP equipment does not						
700 Unsprinklered combustible load limit, MJ/m2 function, impact of design basis fire or	function, impact of design basis fire on safe shutdown:						
Complete burnout of all equipment	it and cables within						
Assuming operation of installed fire extinguishing equipment, impact of fire upon: this Fire Area results in loss of only	y the nonseismic diesel						
Plant operation: None driven fire pump; remaining two (n	(motor-driven and						
Radiological release: None, no radiological materials present diesel-driven) Seismic Category I fir	fire pumps are						
Life safety: Travel distance limits to EXITs meet NFPA 101 unaffected by fire and are operable.	e. All safe shutdown						
Manual firefighting: Access via exterior door equipment and both A and B on-site	ite power sources are						
Property loss: Minor unaffected by fire and are operable.	ie.						

	Fire Area:	F7180	Description:	Guard House				
	Building:	Guard House	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 24, 72, 90A, 101, 8				
		DCD Fig:	Building code occupancy classification: B					
		9A.2-33			Electrical classification:	none		
			Safety-related divisional equipment or cables: none					
			1	none				
			Surrounded	by fire barriers rated at:	to be determined during detaile	d design		
				Except:	to be determined during detaile	d design		
			_					
Consisting of the following Rooms:		Fire De	etection	Fire Suppress	sion			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
to be	to be	Class A combustibles	Area-wide ionization	Manual pulls at	ABC fire extinguishers	Hydrant		
determined	determined	Cable insulation		EXITs				
during	during							
detailed	detailed							
design	design							
			-					
		< 700	Anticipated combustible	load, MJ/m2	Assuming automatic & manual FP equipment does not			
		700	Unsprinklered combusti	ble load limit, MJ/m2	function, impact of design basis f	ire on safe shutdown:		
					Complete burnout of all equipn	ent and cables within		
Assuming ope	ration of instal	led fire extinguishing equ	ipment, impact of fire upo	on:	this Fire Area affects no safety-related or safe			
Р	lant operation:	None			shutdown divisional equipment	; all safety divisions		
Radiol	logical release:	None, no radiological m	aterials present		and both redundant trains A an	d B are operable.		
Life safety: to be determined durin			g detailed design					
Manu	al firefighting:	to be determined durin	g detailed design					
	Property loss:	to be determined during	g detailed design					

	Fire Area:	. F7200	Description: Hot Machine Shop & Storage			
	Building:	. Hot Machine Shop	Applicable codes:	IBC; Reg Guide 1.	.189; NFPA 10, 14, 72, 90A, 101,	804
		DCD Fig:	Building code occupancy classification: F-1			
		9A.2-33	Electrical classification: none			
			1	Safety-relate	ed divisional equipment or cables:	none
			Nons	safety-related redund	lant trains or equipment or cables:	none
			Surrounded by f	fire barriers rated at:	to be determined during detaile	d design
			1	Except:	to be determined during detaile	d design
<u> </u>						
Consisting of t	the following F	Rooms:	Fire Detection	on	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
 '						
to be determined during detailed design	to be determined during detailed design	Class A combustibles Cable insulation Transient combustibles Class IIIB lubricants	Area wide linear heat	Manual pulls (at EXITs)	Hose racks	ABC fire extinguishers Class D fire extinguishers
Assuming ope P Radio Manu	ration of instal 'lant operation: logical release: Life safety: al firefighting:	< 700 700 led fire extinguishing equi None Contained within buildi to be determined during 1.9 m2 access required	Anticipated combustible load, Unsprinklered combustible loa pment, impact of fire upon: ing g detailed design in every 15 m of exterior wall	MJ/m2 Id limit, MJ/m2	Assuming automatic & manual FI function, impact of design basis fi Complete burnout of all equipm this Fire Area affects no safety- shutdown divisional equipment; and both redundant trains A an	P equipment does not ire on safe shutdown: nent and cables within related or safe ; all safety divisions nd B are operable.

Design Control Document/Tier 2

	Fire Area:	F7300	Description:	Service Water / W	ater Treatment Building		
	Building:	Service Water	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 90A, 101, 804				
		DCD Fig:	Building code occupancy classification: to be determined during detailed design				
		9A.2-33			Electrical classification:	none	
				Safety-relate	ed divisional equipment or cables:	none	
			Nons	afety-related redund	lant trains or equipment or cables:	none	
			Surrounded by f	fire barriers rated at:	to be determined during detaile	d design	
				Except:	to be determined during detaile	d design	
Consisting of	Consisting of the following Rooms:		Fire Detection	on	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
to be	to be	Class IIIB lubricants	Area wide spot heat	Manual pulls (at	Hose racks	ABC fire	
determined	determined	Cable insulation		EXITs)		extinguishers	
during	during	Electrical equipment					
detailed	detailed						
design	design						
			-				
		< 700	Anticipated combustible load, 1	MJ/m2	Assuming automatic & manual FP equipment does not		
		700	Unsprinklered combustible load	d limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipn	ent and cables within	
Assuming ope	ration of instal	led fire extinguishing equ	ipment, impact of fire upon:	1	this Fire Area affects no safety-	related or safe	
P	lant operation:	None, but may affect m	akeup water chemistry		shutdown divisional equipment	, but could affect	
Radio	logical release:	None, no radiological m	naterials present		redundant train A and B nonsa	fety-related	
	Lite safety:	to be determined durin	g detailed design		equipment; all safety divisions a	and both on-site and	
Manu	al firefighting:	1.9 m2 access required	in every 15 m of exterior wall		off-site power supplies A and B	are unaffected by fire	
	Property loss:	to be determined durin	g detailed design		and are operable.		

	Fire Area:	F7400	Description: Cold Machine Shop				
	Building:	Cold Machine Shop	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 90A, 101, 804				
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-33			Electrical classification:	none	
				Safety-relate	ed divisional equipment or cables:	none	
			Nons	afety-related redund	ant trains or equipment or cables:	none	
			Surrounded by f	fire barriers rated at:	to be determined during detaile	d design	
				Except:	to be determined during detaile	d design	
Consisting of t	he following F	Rooms:	Fire Detection	on	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
to be	to be	Class IIIB lubricants	Area wide linear heat	Manual pulls (at	Hose racks	ABC fire	
determined	determined	Cable insulation		EXITs)		extinguishers	
during	during						
detailed	detailed						
design	design						
		< 700	Anticipated combustible load,	MJ/m2	Assuming automatic & manual FP equipment does not		
		700	Unsprinklered combustible loa	d limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipn	ent and cables within	
Assuming open	ration of instal	led fire extinguishing equi	pment, impact of fire upon:	1	this Fire Area affects no safety-	related or safe	
Р	lant operation:	None			shutdown divisional equipment	; all safety divisions	
Radiol	ogical release:	None, no radiological m	aterials present		and both redundant trains A an	d B are operable.	
Life safety: to be determined during			g detailed design				
Manu	al firefighting:	1.9 m2 access required	in every 15 m of exterior wall				
	Property loss:	to be determined during	g detailed design				

	Fire Area:	F7500	Description: Warehouse				
	Building:	Warehouse	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 13, 72, 90A, 101, 804				
		DCD Fig:	Building code occupancy classification: S-2				
		9A.2-33			Electrical classification:	none	
				Safety-relat	ted divisional equipment or cables:	none	
			1	Nonsafety-related redune	dant trains or equipment or cables:	none	
			Surrounded	by fire barriers rated at:	to be determined during detaile	d design	
			Except: to be determined during detailed design				
Consisting of t	Consisting of the following Rooms:		Fire De	etection	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
to beto beClass A combustiblesdetermineddeterminedCable insulationduringduringClass IIIB lubricantsdetaileddetaileddetaileddesigndesigndesign		Suppression Manual pulls at flowswitch EXITs		Dry-pipe sprinkler 8.2 L/min per m2 over most remote 302 m2 (rack protection to be determined during detailed design)	ABC fire extinguishers		
> 700 700 700 Assuming operation of installed fire extinguishing equ Plant operation: None Radiological release: Life safety: Manual firefighting: Property loss: to be determined durin Property loss:			Anticipated combustible Unsprinklered combusti ipment, impact of fire upon aterials present g detailed design g detailed design	e load, MJ/m2 ble load limit, MJ/m2 on:	Assuming automatic & manual F function, impact of design basis f Complete burnout of all equipm this Fire Area affects no safety- shutdown divisional equipment and both redundant trains A an	P equipment does not ire on safe shutdown: nent and cables within related or safe ; all safety divisions nd B are operable.	
	rioperty loss.	to be determined during	g uctalleu uesigli	l	L		

	Fire Area:	F7600	Description:	Training Center			
	Building:	Training Center	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 13, 72, 75, 90A, 101, 804				
		DCD Fig:	Building code occupancy classification: B				
		9A.2-33			Electrical classification:	none	
				Safety-relat	ed divisional equipment or cables:	none	
			ľ	Nonsafety-related redun	dant trains or equipment or cables:	none	
			Surrounded	by fire barriers rated at:	to be determined during detaile	d design	
				Except	to be determined during detaile	d design	
Consisting of t	Consisting of the following Rooms:		Fire De	etection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
to be	to be	Class A combustibles	Suppression	Manual pulls at	Preaction sprinkler	CO2 fire	
determined	determined	Cable insulation	flowswitch	EXITs	4.1 L/min per m2	extinguishers	
during	during	Computer equipment			over most remote 182 m2	ABC fire	
detailed	detailed					extinguishers	
design	design						
		> 700	Anticipated combustible	load, MJ/m2	Assuming automatic & manual FP equipment does not		
		700	Unsprinklered combusti	ble load limit, MJ/m2	function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipm	nent and cables within	
Assuming oper	ration of instal	led fire extinguishing equi	pment, impact of fire upo	on:	this Fire Area affects no safety-	related or safe	
Р	lant operation:	None			shutdown divisional equipment	; all safety divisions	
Radiol	logical release:	None, no radiological m	aterials present		and both redundant trains A an	d B are operable.	
	Life safety:	to be determined during	g detailed design				
Manu	al firefighting:	to be determined during	g detailed design				
	Property loss:	to be determined during	g detailed design				

	Fire Area:	F7700	Description:	Service Building			
	Building:	Service	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 13, 72, 90A, 101, 804; 28 CFR 36				
		DCD Fig:	Building code occupancy classification: B				
		9A.2-33	1		Electrical classification:	none	
		!	1	Safety-relate	ed divisional equipment or cables:	none	
			Nons	safety-related redund	lant trains or equipment or cables:	none	
		!	Surrounded by f	fire barriers rated at:	to be determined during detaile	d design	
				Except:	to be determined during detaile	d design	
			·				
Consisting of the following Rooms:		Fire Detection	on	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
			'				
to be determined	to be determined	Class A combustibles Cable insulation	Suppression flowswitch	Manual pulls at EXITs	Wet-pipe sprinkler 4.1 L/min per m2	ABC fire extinguishers	
during	during		1		over most remote 140 m2		
detailed	detailed		1				
design	design	ļ!	 '				
		<u> </u>	 '				
		~ 700	1 Antipinated combustible load	MI/m?	A comming outomotio & manual Fi	D againment does not	
1		700	Insprinklored combustible los	WIJ/IIIZ	Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown:		
1		/00	Unspinikiered combustione toa	Ia IIIIII, 1913/1112	Complete humout of all equip	ant and apples within	
Assuming one	ration of instal	lad fire extinguishing equi	inment impact of fire upon		Complete burnout of an equiph	related or sefe	
Assuming open P	lant operation	None: will impede accer	s into RR/FR/CR/TR/RW	1	this Fire Area affects no safety-related or safe		
Radiol	ant operation.	None no radiological r	s little ND/FD/CD/FD/RVV	1	shutdown uivisional equipment	; all safety unvisions	
Rautor	Life safety:	to be determined during	a detailed design	1	and both redundant trains A an	iu b are operable.	
Manu	al firefighting:	to be determined during	g detailed design	4			
Ivianu	Droperty loss	to be determined during	g detailed design	4			
1	1 loperty 1055.	to be acter minea auring	2 uttalitu utsign]			

Design Control Document/Tier 2

ESBWR

	Fire Area:	F7800	Description:	Auxiliary Boiler B	uilding		
	Building:	Auxiliary Boiler	Applicable codes:	IBC; Reg Guide 1	189; NFPA 10, 24, 72, 101, 804		
		DCD Fig:	Building code occupancy classification: to be determined during detailed design				
		9A.2-33	Elec	ctrical classification:	to be determined during detaile	d design	
				Safety-relat	ed divisional equipment or cables:	none	
			Nons	safety-related redund	lant trains or equipment or cables:	none	
			Surrounded by f	fire barriers rated at:	to be determined during detaile	d design	
				Except:	to be determined during detaile	d design	
Consisting of t	Consisting of the following Rooms:		Fire Detection	on	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
to be	to be	Class IIIB lubricants	Area wide spot heat	Manual pulls (at	ABC fire extinguishers	Hydrants	
determined	determined	Cable insulation		EXITs)			
during	during	Electrical equipment					
detailed	detailed						
design	design						
		< 700	Anticipated combustible load	NAT/m 7	A source outomatic & manual El	D agginment dess not	
		700	Anticipated combustible load,	MJ/IIIZ	Assuming automatic & manual FP equipment does not		
		/00	Unspinikiered combustible ioa	ld IIIIIII, 1913/1112	runction, impact of design basis fire on safe shutdown:		
Assuming one	ration of instal	led fire extinguishing equi	inment impact of fire upon		this Fire Area affects no safety	related or sofo	
P	lant operation.	None restoration requi	red before outage	1	this Fife Area affects no safety-	related of sale	
Radiol	ogical release.	None no radiological m	aterials present		shutdown divisional equipment	; all salety divisions	
T(uui)	Life safety:	to be determined during	aterials present		and both on-site and on-site por	wer supplies A allu D	
Manu	al firefighting	1 9 m ² access required	in every 15 m of exterior wall		are unanected by fire and are o	perable.	
Iviana	Property loss:	to be determined during	g detailed design				
	Toperty 1055.	to be determined during	s uctanica ucsign	1			

	Fire Area:	F7900	Description:	Administration Buildi	ng		
	Building:	Administration	Applicable codes:	IBC; Reg Guide 1.189	; NFPA 10, 13, 72, 90A, 101, 804;	28 CFR 36	
		DCD Fig:	-	Build	ing code occupancy classification:	В	
		9A.2-33			Electrical classification:	none	
				Safety-relat	ed divisional equipment or cables:	none	
			Nonsafety-related redundant trains or equipment or cables: none				
			Surrounded	by fire barriers rated at:	to be determined during detaile	d design	
			J	Except:	to be determined during detaile	d design	
Consisting of the following Rooms:		Fire De	etection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
		!					
to be determined during detailed design	to be determined during detailed design	Class A combustibles Cable insulation	Suppression flowswitch	Manual pulls at EXITs	Wet-pipe sprinkler 4.1 L/min per m2 over most remote 140 m2	ABC fire extinguishers	
Assuming ope P Radio'	Property loss: ration of instal lant operation: logical release:	> 700 700 Moderate led fire extinguishing equi None None, no radiological m to be determined durin	Anticipated combustible Unsprinklered combustil ipment, impact of fire up naterials present	load, MJ/m2 ble load limit, MJ/m2 on:	Assuming automatic & manual FI function, impact of design basis fr Complete burnout of all equipm this Fire Area affects no safety	P equipment does not ire on safe shutdown: ient and cables within related or safe ; all safety divisions id B are operable.	

	Fire Area:	Fire Area: F8110 Description: Breathing Air Storage Division I						
	Building:	EBAS Structure	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 24, 72, 101, 804			
		DCD Fig:	_	Bu	ilding code occupancy classification:	F-1		
		9A.2-2	1		Electrical classification:	none		
		9A.2-3		Safety-re	elated divisional equipment or cables:	Ι		
		9A.2-4		Nonsafety-related red	undant trains or equipment or cables:	none		
		9A.2-11	Surrounde	ed by fire barriers rated at	t: 3 hours			
				Except	t: basemat (non-rated), exterior wa	lls (non-rated)		
Consisting	Consisting of the following Rooms:		Fire De	tection	Fire Suppress	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
-7400	8110	Class IIIB lubricants	Area-wide ionization	Manual pulls	Hydrants	ABC fire extinguishers		
 '		Cable insulation						
<u> </u>								
			٦					
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP equipment does not			
		700	Unsprinklered combustible	load limit, MJ/m2	function, impact of design basis fire	e on safe shutdown:		
					Complete burnout of all equipme	ent and cables within		
Assuming of	operation of in	stalled fire extinguishing eq	juipment, impact of fire upor	n:	this Fire Area results in loss of or	aly Division I		
Р	lant operation:	None			emergency breathing air; Divisio	on II and III of		
Radiol	logical release:	None, no radiological ma	iterials present		breathing air and trains A and B	are unaffected by fire		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		and are operable. Both A and B	on-site power sources		
Manu	al firefighting:	Limited access via hatch			are unaffected by fire and are op	erable.		
	Property loss:	: Moderate		l				
4								

	Fire Area	. F8120	Description: Breathing Air Storage Division II					
	Building:	. EBAS Structure	Applicable codes:	IBC; Reg Guide 1.189;	NFPA 10, 24, 72, 101, 804			
		DCD Fig:	_	Bu	ilding code occupancy classification:	F-1		
		9A.2-2]		Electrical classification:	none		
		9A.2-3		Safety-re	elated divisional equipment or cables:	II		
		9A.2-4		Nonsafety-related red	undant trains or equipment or cables:	none		
		9A.2-11	Surrounded by fire barriers rated at: 3 hours					
	Except: basemat (non-rated), exterior walls (non-rated)					Ills (non-rated)		
Consisting	Consisting of the following Rooms:		Fire De	etection	Fire Suppres	sion		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
['		<u> </u>						
-7400	8120	Class IIIB lubricants	Area-wide ionization	Manual pulls	Hydrants	ABC fire extinguishers		
 '		Cable insulation			<u> </u>			
 '	<u> </u>	<u> </u>	l					
			Π					
1		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP equipment does not			
		700	Unsprinklered combustible	; load limit, MJ/m2	function, impact of design basis fire on safe shutdown:			
					Complete burnout of all equipme	ent and cables within		
Assuming o	operation of ins	stalled fire extinguishing eq	upment, impact of fire upor	n:	this Fire Area results in loss of or	aly Division II		
۲ ب	lant operation:	None			emergency breathing air; Divisio	on I and III of breathing		
Radiol	ogical release:	None, no radiological ma	iterials present		air and trains A and B are unaffe	ected by fire and are		
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		operable. Both A and B on-site p	ower sources are		
Manu	al firefighting:	Limited access via hatch			unaffected by fire and are operat	ole.		
	Property loss:	. Minor						
4								

Fire Area: F8130 Description: Breathing Air Storage Division					Division III		
	Building:	EBAS Structure	Applicable codes:	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 24, 72, 101, 804			
DCD Fig:			Building code occupancy classification: F-1				
		9A.2-2			Electrical classification:	none	
		9A.2-3		Safety-re	lated divisional equipment or cables:	III	
		9A.2-4		Nonsafety-related red	undant trains or equipment or cables:	none	
		9A.2-11	Surrounde	ed by fire barriers rated at	t: 3 hours		
				Except	t: basemat (non-rated), exterior wa	lls (non-rated)	
			-				
Consisting	of the followin	g Rooms:	Fire De	tection	Fire Suppress	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
['							
-7400	8130	Class IIIB lubricants	Area-wide ionization	Manual pulls	Hydrants	ABC fire extinguishers	
 '		Cable insulation			_		
 '							
		=00	1				
		< 700	Anticipated combustible load, MJ/m2		Assuming automatic & manual FP	equipment does not	
1		700	Unsprinklered combustible load limit, MJ/m2		function, impact of design basis fire on safe shutdown:		
		. 11 1 0 1 .			Complete burnout of all equipme	ent and cables within	
Assuming c	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upor	n:	this Fire Area results in loss of or	ily Division III	
	lant operation:	None			emergency breathing air; Divisio	on I and II of breathing	
Radiol	logical release:	None, no radiological ma	terials present	terials present air and trains A and B are unaffected		ected by fire and are	
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		operable. Both A and B on-site p	ower sources are	
Manu	al firefighting:	Limited access via hatch			unaffected by fire and are operat	ole.	
	Property loss:	Minor		l			
1							

	Fire Area:	F8250	Description: Electric Firepump A					
	Building:	Fire Pump Enclosure	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 20, 24, 72, 101, 804					
DCD Fig:				Building code occupancy classification: F-1				
		9A.2-4	Electrical classification: none					
				Safety-re	elated divisional equipment or cables:	none		
				Nonsafety-related red	undant trains or equipment or cables:	Α		
			Surround	ed by fire barriers rated a	t: 3 hours (fire wall common with F	8260)		
				Excep	t: exterior walls (non-rated), roof (n	ion-rated)		
			-					
Consisting	of the followin	g Rooms:	Fire De	etection	Fire Suppression			
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup		
4650	8250	Class IIIB lubricants	Area-wide ionization	Manual pull	CO2 fire extinguisher	Hydrant		
		Cable insulation						
		< 700	Anticipated combustible load, MJ/m2		Assuming automatic & manual FP equipment does not			
		700	Unsprinklered combustible load limit, MJ/m2		function, impact of design basis fire on safe shutdown:			
					Complete burnout of all equipment and cables within			
Assuming of	operation of ins	stalled fire extinguishing ec	juipment, impact of fire upon:		this Fire Area results in loss of only the motor-driven			
Р	lant operation:	None			fire pump; remaining two diesel-driven fire pumps			
Radiol	logical release:	None, no radiological ma	aterials present		(Seismic Category I and nonseismic) and all safe			
	Life safety:	Travel distance limits to	EXITs meet NFPA 101		shutdown equipment are unaffec	ted by fire and are		
Manu	al firefighting:	Access via door			operable. Both A and B on-site p	ower sources are		
	Property loss:	Minor			unaffected by fire and are operat	ole.		

	Fire Area:	F8260	Description: Diesel Fire Pump B				
Building: Fire Pump Enclosure			Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 13, 20, 24, 30, 37, 72, 101, 804				
DCD Fig:			Building code occupancy classification: F-1 per IBC 307.9.5				
		9A.2-4			Electrical classification:	none	
				Safety-rel	ated divisional equipment or cables:	none	
				Nonsafety-related redu	indant trains or equipment or cables:	В	
			Surround	ed by fire barriers rated at	3 hours (fire wall common with F	(8250)	
]	Except	exterior walls (non-rated), roof (r	ion-rated)	
			-				
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppression		
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	8260	< 2500 L Class II fuel	Suppression flowswitch	Manual pull	Wet-pipe sprinkler	Hydrant	
		Class IIIB lubricants			12.2 L/min per m2		
		Cable insulation			over entire area		
			n				
		> 700	Anticipated combustible load, MJ/m2		Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible load limit, MJ/m2		function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	nt and cables within	
Assuming of	operation of in	stalled fire extinguishing ec	juipment, impact of fire upon: this Fire Area results in loss of only Seismic Cate			ly Seismic Category I	
Р	lant operation:	None	diesel-driven fire pump; remaining two (motor-d			ng two (motor-driven	
Radiol	logical release:	None, no radiological ma	aterials present		and nonseismic diesel-driven) fire	e pumps and all safe	
Life safety: Travel distance limits to			EXITs meet NFPA 101		shutdown equipment are unaffect	ted by fire and are	
Manu	al firefighting:	Access via door			operable. Both A and B on-site p	ower sources are	
	Property loss:	Minor			unaffected by fire and are operab	ole.	
4							

	Fire Area:	F9101	Description: Uncontrolled Access				
	Building:	Tunnel	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804				
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-3			Electrical classification:	none	
		9A.2-25		Safety-r	elated divisional equipment or cables:	none	
				Nonsafety-related re-	dundant trains or equipment or cables:	none	
			Surround	ed by fire barriers rated	at: 3 hours		
				Exce	pt: basemat (non-rated)		
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
-2000	9101	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
		Class IIIB lubricants		(at EXITs)		_	
		Class A combustibles					
		Transient combustibles					
		< 700	Anticipated combustible lo	ad, MJ/m2	Assuming automatic & manual FP	equipment does not	
		700	Unsprinklered combustible load limit, MJ/m2		function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	ent and cables within	
Assuming	operation of ins	stalled fire extinguishing eq	uipment, impact of fire upor	n:	this Fire Area affects no safe shu	tdown equipment or	
Plant operation: None; will impede access		s into RB, CB, and EB		circuits; all safety-related equipment and both			
Radiological release: None, no radiological ma		terials present		redundant trains A and B are op	erable.		
Life safety: Travel distance limits to		EXITs meet NFPA 101		_			
Manual firefighting: Access via stairwells							
	Property loss:	Minor					

Fire Area: F9150	Description:	Cable Tunnel A		
Building: Tunnel	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 13, 14, 72, 101, 804	
DCD Fig:		Buil	ding code occupancy classification:	F-1
9A.2-3	7		Electrical classification:	none
9A.2-4		Safety-rela	ated divisional equipment or cables:	none
9A.2-25		Nonsafety-related redur	adant trains or equipment or cables:	A
	Surround	led by fire barriers rated at:	3 hours	
	-	Except:	none	
Consisting of the following Rooms:	Fire De	etection	Fire Suppress	sion
EL Room # Potential Combustibles	Primary	Backup	Primary	Backup
			· · · · · · · · · · · · · · · · · · ·	
1300 9150 Cable insulation	Area-wide ionization	Suppression flowswitch	Wet-pipe sprinkler 12.2 L/min per m2 over most remote 235 m2	Hose racks (in nearby stairwells) ABC fire extinguishers
> 1400 1400	Anticipated combustible lo Unsprinklered combustible	Dad, MJ/m2 e load limit, MJ/m2	Assuming automatic & manual FP function, impact of design basis fir Complete burnout of all equipme	equipment does not e on safe shutdown: ent and cables within
Assuming operation of installed fire extinguishing en	quipment, impact of fire upc	on:	this Fire Area results in loss of or	ıly redundant train A
Plant operation: None		1 !	on-site power source and related	equipment; all safety
Radiological release: None, no radiological m	aterials present	/	divisions and train B on-site powe	er source and related
Life safety: Travel distance limits to	EXITs meet NFPA 101	_	equipment are unaffected by fire	and are operable.
Manual firefighting: Access via stairwells		'	1	
Duomontar loggi Modonato		-		

	Fire Area:	F9160	Description: Cable Tunnel B			
	Building:	Tunnel	Applicable codes:	IBC; Reg Guide 1.189; N	FPA 10, 13, 14, 72, 101, 804	
		DCD Fig:	-	Buil	ding code occupancy classification:	F-1
1		9A.2-3			Electrical classification:	none
		9A.2-4		Safety-rela	ated divisional equipment or cables:	none
1		9A.2-25		Nonsafety-related redu	ndant trains or equipment or cables:	В
			Surround	led by fire barriers rated at:	3 hours	
				Except:	none	
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppress	sion
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup
1300	9160	Cable insulation	Area-wide ionization	Suppression flowswitch	Wet-pipe sprinkler 12.2 L/min per m2 over most remote 235 m2	Hose racks (in nearby stairwells) ABC fire extinguishers
> 1400 Anticipated combustible load, MJ/m2 Assuming automatic & manual FP equipment does not function, impact of design basis fire on safe shutdown: Assuming operation of installed fire extinguishing equipment, impact of fire upon: Complete burnout of all equipment and cables within this Fire Area results in loss of only redundant train B on-site power source and related equipment; all safety divisions and train A on-site power source and related						
Radiological release: None, no radiological ma Life safety: Travel distance limits to Manual firefighting: Access via stairwells Property loss: Moderate			EXITs meet NFPA 101		equipment are unaffected by fire	and are operable.

Fire Area: F9201 Description: Controlled Access							
	Building:	Tunnel	Applicable codes: IBC; Reg Guide 1.189; NFPA 10, 14, 72, 101, 804				
		DCD Fig:	Building code occupancy classification: F-1				
		9A.2-4			Electrical classification:	none	
		9A.2-13		Safety-r	elated divisional equipment or cables:	none	
				Nonsafety-related rec	dundant trains or equipment or cables:	none	
			Surround	ed by fire barriers rated a	at: <mark>3 hours</mark>		
				Excep	ot: basemat (non-rated); elevator d	oors (1.5 hr rated)	
<u> </u>		7	E. D				
Consisting	of the followin	ig Rooms:	Fire De	etection	Fire Suppres	sion	
EL	Room #	Potential Combustibles	Primary	Backup	Primary	Backup	
4650	9201	Cable insulation	Area-wide ionization	Manual pulls	Hose racks	ABC fire extinguishers	
		Class IIIB lubricants		(at EXITs)		- 0	
		Class A combustibles					
		Transient combustibles					
		< 700	Anticipated combustible load, MJ/m2		Assuming automatic & manual FP equipment does not		
		700	Unsprinklered combustible load limit, MJ/m2		function, impact of design basis fire on safe shutdown:		
					Complete burnout of all equipme	ent and cables within	
Assuming of	operation of ins	stalled fire extinguishing eq	quipment, impact of fire upon:		this Fire Area affects no safe shutdown equipment or		
Р	'lant operation:	None; will impede access	s into RB and FB		circuits; all safety-related equipment and both		
Radiol	logical release:	None, no radiological ma	terials present		redundant trains A and B are op	erable.	
	Life safety: Travel distance limits to		EXITs meet NFPA 101				
Manu	al firefighting:	Access via stairwells					
	Property loss:	Minor					
1							

9A.6 SPECIAL CASES

9A.6.1 Piping Penetrations, Reactor Building

Piping penetrations through the drywell wall have unique design considerations. The stress and containment requirements along with the temperature inputs to the concrete walls leave little design latitude. Some of these high-energy piping penetrations may not contain a 3-hr fire-resistive barrier as provided throughout the other ESBWR buildings. It is a COL license requirement to provide a detailed design with equivalent construction to tested wall assemblies when penetrating rated fire barriers or testing will be required. Refer to Subsection 9A.7.6 for COL information.

9A.6.2 Fire Door Deviations

The design of the nuclear facility must meet many criteria, including fire resistance. Fire doors are an example of compromise with other overriding design criteria that must also be met. Some doors, such as the airlock doors in the Reactor Building, form part of a pressure boundary and are of special construction. These doors generally have a backup fire door.

9A.6.3 Pipe Break Analyses

Per the criteria in Section 3.6, the high-pressure fire water systems require analysis for moderate energy lines.

9A.6.4 Fire Separation for Divisional Electrical Systems

There are cases where cables of more than one division are in relatively close proximity and require special justification. These areas are listed below and justification for each is provided.

9A.6.4.1 RPS Scram Circuits

Wiring to each of the four groups of scram solenoids is run in separate rigid, grounded steel conduits to prevent the possibility of exposing the scram solenoid circuits to a "hot" short (i.e., two energized switch legs of different group circuits shorted together that could inhibit the scram command to more than one group of control rods). No other wiring is contained within the conduits. Overheated conductors that are shorted to the conduits cannot cause an unsafe failure because the solenoids are de-energized by shorts to ground and thus will create a safe condition. Separate grounded steel conduits are also provided for both the "A" and "B" solenoid circuits of the same scram group.

The air operated Scram Solenoid valves are part of the HCU assemblies (two solenoids per valve). They are safety-related and receive their divisional power (Division I or II) from Reactor Protection System (RPS) via the Scram Solenoid Fuse Panels. Separate fuse panels are provided for each scram group. Fuses associated with "A" and "B" solenoids of a single scram group are installed in separate panels or with appropriate separation within the same panel. Fire that causes a hot short on the cables feeding power to the scram solenoids can cause the associated fuses in the scram solenoid fuse panel to blow. The fault is limited to the loss of power to the associated solenoids and causes a half-scram or scram condition (a fail-safe condition).

The air header dump valves act as a diverse backup to the scram logic and are safety-related. Separate divisions of 240 VDC power energize the two air header dump valves. Power supply wiring to each solenoid is individually circuit-protected and run in separate steel conduit.

9A.6.4.2 MSIV Closure Circuits

Sensors used for the main steam isolation valve (MSIV) closure (via the leak detection system) are located in the Turbine Building and in the main steam line (MSL) tunnels. These sensors are classified as Class 1E devices and use fire-retardant cabling to connect to the Main Control Room.

The safety-related devices and associated cabling are normally protected from flying objects and are physically separated. Because of the design and construction of the Turbine Building (not a Seismic Category I or a Class 1E safety-related area) it is possible for these sensors and their leads to be damaged during seismic or fire events in the Turbine Building. However, a fire in the Turbine Building is sensed by the Leak Detection and Isolation System (LD&IS) temperature monitors and causes MSIV closure before the fire burns out the equipment. No fire will propagate along the fire-retardant cabling to the control room and cause damage to the power sources.

The MSIV sensors and type are:

- MSIV Condenser Vacuum Pressure transmitter located in the Turbine Building
- MSL Turbine Inlet Pressure transmitter located in the Turbine Building
- Main Steam Line Tunnel Area Ambient Temperature temperature element located in the MSL Tunnel
- Main Steam Line Tunnel Area Ambient Temperature temperature element located in the Turbine Building

Backup trips for MSIV isolation, either direct or indirectly through the RPS, are caused by the turbine trip. Tripping of the MSIVs as a result of a fire in the Turbine Building is acceptable.

For the pressure transmitters and temperature elements, the signals are low-level analog current signals that are transmitted over a shielded twisted pair of conductors per transmitter. The cables are routed in separate grounded conduits on a divisional basis. Shorting together, shorting to ground, or opening a conductor in a current loop cable only affects the instrument associated with the cable. No damage will occur or propagate as a result of these possible failures.

In summary, failure of the MSIV sensors in the Turbine Building and their cables in any fashion is considered acceptable because a fire results in automatic closure of the MSIVs.

9A.6.4.3 Main Steamline Tunnel Area Temperature and Radiation Monitoring

These divisional detectors are physically located in the MSL tunnel area.

By design, this area has no exposed combustibles. The conduits and the detectors have some physical protection from the steam lines and hangers in the area making it improbable that a fire from below could damage the redundant sensors or cables.

Each radiation monitor has a downscale trip such that a low reading from the detectors will provide a trip. This trip is in addition to the normal upscale trip so that a failure in either direction results in a trip.

Leak detection temperature detectors of the MSL LD&IS measure ambient temperature around the MSL and will provide a MSIV isolation signal at fire-induced temperatures below the threshold of damage to the radiation monitoring cable. A common failure of the radiation monitor divisional cables only affects the radiation monitors and not the remainder of the divisional equipment.

9A.6.4.4 Main Steamline ADS Relief Valves

The main steamline ADS relief valves each have three solenoid valve pilots in close proximity at the valve operator. Each solenoid is powered from a different division with all four divisions utilized for the ten valves. If either solenoid is energized, the associated relief valve opens.

The divisional signal cables are run in separate conduits from their location on the valve to the appropriate divisional penetration and via divisional raceways to their multiplex interfaces.

These valves are located in a low fire loading area and are inaccessible during plant operation such that transient fire loading is not introduced. The containment is also inerted during operation.

The conduit is arranged so that the divisional cables exit the relief valve area in diverse directions.

The solenoid valve coils are located inside metallic enclosures on each valve so that a fire inside the coil compartment of one pilot does not influence the coil or cable of the redundant pilot.

The ADS valves are arranged in two groups of four valves each with adequate spatial separation to ensure that disturbances (i.e., fire, pipe rupture phenomena, falling objects) affecting one group do not affect the other group. For line breaks requiring ADS for depressurization, the design ensures that at least four of the eight valves are available. During operation, a sustained fire is not possible in the inerted containment (drywell) area.

Electrically, the ADS logic system load drivers isolate the divisional signals from other components in their respective division, so that damage to the cable at the valves is limited to that particular cable. Electrical arcing damage to a cable or solenoid coil cannot result in inadvertent opening of the main valve because shorts, opens, or grounds at the solenoid cannot cause the solenoid to be energized. Short circuits at this location cannot jeopardize 1E power supplies because circuit resistance is sufficient to permit appropriate circuit protection coordination.

With this degree of redundancy, attention to design, electrical isolation, and containment inerting, plant safety is not compromised by having the divisional cables in close proximity at the ADS valves.

9A.6.4.5 Main Steamline Isolation Valve Control and Limit Switch Interfaces

There are eight MSIVs for isolating the MSLs, two in each MSL. The outboard MSIV on each MSL is located outside the primary containment in the main steam tunnel to the Turbine Building. The inboard MSIV on each MSL is located inside the inerted drywell.

The MSLs are arranged so that none of the valves are located vertically above any other MSIV.

The MSIVs are designed to "fail safe" in that loss of power to both solenoids causes closure isolation. For both the inboard and outboard valves, Division II power actuates Solenoid 2 and Division I power actuates Solenoid 3. Solenoid 1 is the test solenoid and is powered by Division I (outboard) and Division 2 (inboard).

The appropriate division of power is connected to limit switches that open when the MSIV closes to initiate a reactor scram trip signal to the divisional scram logic, and to stop MSIV closure during MSIV exerciser tests.

The MSIVs and the 90% open (10% closure test) contacts and the 92% open (scram) contacts are classified as safety-related components and comply with the separation and isolation requirements of IEEE 603. The 10% open limit switch contact of each MSIV provides position indication to the plant computer and to indicator lights.

The inboard MSIVs are contained within the inerted environment. Failure of the MSIV or its control and interlocking circuits that could be caused by a postulated fire outside the containment cannot prevent closure of at least one of the MSIVs in each line.

The closure of one MSIV does not result in a reactor scram. Because the outboard valve scram signals are redundant to the inboard valves on each line, a fire outside the containment does not affect the redundant capability to cause scram.

9A.6.4.6 Under the Reactor Vessel

This area contains the following electrical cables: Rod Control and Information System (RC&IS) cabling, Fine Motor Control Rod Drive (FMCRD) separation switch cables, neutron monitor system cabling, and other cables, as required. During reactor operation, the area cannot sustain fire because it is in an inerted atmosphere. All cables from the lower drywell are routed to the upper drywell via interconnecting risers. Both rigid and flexible conduit is used within the risers.

RC&IS Cables

The RC&IS cables are routed under the vessel through pull boxes inside the pedestal, then through cable boxes and raceways to electrical containment penetrations. RC&IS hardwired cables are routed from these containment penetrations to the RC&IS Reactor Building panels located in clean areas of the Reactor Building.

All RC&IS cables (i.e., synchro cables, FMCRD brake and motor cables, reed switch rod position status cables) are contained in flexible metallic conduit under the vessel, arranged in the pull boxes mounted just above the CRD restraint structure. All of these RC&IS cables are classified as non-safety.

FMCRD Separation Switch Cables

The FMCRD cables for the Class 1E separation switches of each FMCRD are classified as safety-related and separated into two groups (A and B) for routing out of the under vessel area to two separate divisions of the essential multiplexing system. The cables are routed under the vessel through pull boxes inside the pedestal; then through cable boxes and raceways to electrical containment penetrations. The separation switch cables are then routed from the containment penetrations to essential multiplexing system panels in the Reactor Building. The installation of

these Class 1E cables is arranged so that A and B cables travel in opposite directions from under the vessel and pass through penetrations on the opposite side of the Reactor Building.

The cables receive low-voltage (48 volts) power from the essential multiplex system power supplies. This provides natural circuit protection in event of shorts or grounds on the system. Such events do not jeopardize the integrity or independence of the higher voltage divisional power busses upstream of the power supplies.

Local Power Range Monitor (LPRM) Cables

The LPRM cables are individually contained in flexible metallic conduit under the vessel. These cables are divided into four divisions of cabling, corresponding to the four divisions of the neutron monitoring system.

The cabling is also supported on the control rod drive housing flanges. The cabling is routed along particular rows of housing flanges. The Division I and III cables are routed under vessel to the 0° to 180° half of the core, whereas Division II and IV cables are routed under vessel to the 180° to 360° half of the core. The cabling is then routed through the pedestal and drywell in enclosed solid bottom cable tray in a manner that brings the Division I LPRM cables into the 0° to 90° quadrant of the lower drywell; Division II into the 180° to 270° quadrant; Division III into 90° to 180° quadrant; and Division IV into the 270° and 360° quadrant. Once in the upper drywell, the cables continue in separated divisional cable raceways and penetrations.

Startup Range Neutron Monitor (SRNM) Cables

The cables for the SRNM detectors are individually contained in flexible metallic conduit. These cables are routed along with and pass through the same divisional penetrations as the LPRM cables.

Other Cables

All other cables under the pedestal are classed as non-divisional. These cables are routed in rigid or flexible metallic conduit through non-divisional conduit openings in the pedestal wall to nondivisional cable raceways in the containment.

Fire Damage Analysis

The containment is inerted during operation therefore a fire is not possible. Additionally the following tend to reduce the risk from a fire.

A fire within a conduit is contained in the individual conduit without damage to the surrounding conduit.

The non-divisional cabling in the conduit is low voltage, fault-protected cable and not likely to be involved in an electrically generated fire internal to the conduit.

The space under the reactor vessel is devoid of combustible material except for the cable insulation inside the various conduits.

Administrative procedures to control combustible materials are provided. These procedures prohibit combustibles from being stored in areas with divisional cable or within electrical equipment areas.

Maintenance during reactor shutdown can involve welding in the area under the vessel. Administrative procedures require special fire protection during welding or other maintenance operations and housekeeping procedures are provided.

Therefore the design features in the area under the vessel are adequate for protecting the redundant trains from damage by fire.

9A.6.4.7 Local Instrumentation and Control Equipment

Divisional safety-related panels are generally designed and located to serve a single division. Multidivisional panels and racks are located in divisional compartments with physical separation between divisions.

The incoming cables for each division are in separate conduit and where possible the conduit is embedded in concrete.

Some areas contain more than one division of instrumentation needed to isolate redundant sets of isolation valves, HVAC, or for some other purpose requiring redundancy.

9A.6.4.8 Leak Detection Instrumentation

Temperatures, pressures, radiation levels, and process flows are measured to detect leakage of reactor coolant into or within the containment.

Sensors of redundant divisions are used in the plant areas to detect leakage from the reactor coolant pressure boundary and to generate signals ultimately used to provide isolation closure signals to the containment isolation valves. Sensors are part of each individual system being monitored, whereas the Leak Detection and Isolation System (LD&IS) comprises the interface between these sensors and the Safety System Logic and Control (SSLC) system to identify leakage and initiate containment isolation. Containment isolation is a safety-related function but is not necessary for post-fire safe shutdown.

The divisional sensors are located in separate detector assemblies and the signal lead cables are brought out in separate rigid (or flexible) metal conduit. The sensors are distributed within a room or along parallel piping to provide redundancy. Shorting and/or grounding of these cables due to postulated fire does not jeopardize the emergency power busses because the low-voltage power supplies that feed the transmitters are current-limited. Loss or spurious actuation of these signals due to a fire does not affect safe shutdown.

9A.6.4.9 Standby Liquid Control

The Standby Liquid Control System (SLC) is comprised of two independent loops. Each loop is located entirely in one fire area, and as such a fire in one division will not damage equipment in the other division. The SLC equipment is all divisionally separated except for the squib injection valves which each have two coils powered by separate safety-related DC power divisions. If a fire were to occur and damage both divisional power supplies to the squib injection valves, the effects would be limited spurious operation or failure of the squib injection valves and no other divisional equipment would be affected. Spurious operation or failure of SLC system does not affect safe shutdown.

The control cabling is routed in separate conduit or trays for each division, separated from each other, to meet IEEE 384. Conduit is embedded in concrete where feasible.

Postulated fire damage that causes a hot short to the electrical cables in the SLC area could inadvertently result in injection of boron. Fire could also open the cabling to a squib valve thus preventing opening of the valve on command from the Main Control Room.

9A.6.4.10 Reactor Building Operating Deck Radiation Monitors

Radiation monitoring within this area is provided by two independent systems, the area radiation monitoring system and the process radiation monitoring system.

The area radiation monitoring (ARM) system is nonsafety-related and monitors radiation in the fuel storage and handling areas. It has no system actuation function but is used for monitoring of background radiation and radiation resulting from postulated accidental fuel drops. The sensors are mounted on the walls within the fire zone area. These detectors are designed to annunciate local and control room alarms for both high and low radiation conditions. The low condition is an indication of a defective sensor or an inoperative radiation monitor. Loss of these detectors from a fire does not affect plant safety.

The process radiation monitoring (PRM) channels in this area are safety-related and are used to monitor radiation in the air exhaust in the HVAC ducts. However, these sensors are not located directly in the fire area, but are on the main HVAC exhaust duct. Therefore, the sensors would not be exposed directly to an area fire, only to the exhausted smoke.

The PRM channels are designed such that any two-out-of-four signals, based on very high or very low radiation conditions within the HVAC duct, isolate the HVAC ducts in the refueling floor and the Reactor Building safety envelope area and initiate closure of the containment vent and purge ducts. The very low radiation trip assures the safety action is initiated on sensor failure.

The four divisions of PRM sensors are located within close proximity to each other to provide true two-out-of-four actuation logic. The arrangement is justified by the exhaust duct location (i.e., separate from the fire zone), and by the automatic actuation of the system's safety function should two or more sensors fail.

9A.6.4.11 Containment Isolation Valves

The primary function of each isolation valve is to close to isolate containment when isolation is required. In general, outboard isolation valves are assigned to Division I and inboard isolation valves to Division II. In some cases this results in Division I outboard isolation valves being located in Division II areas. This is acceptable from a functional standpoint because a fire in an area outside of containment and involving the penetration is assumed to disable the system whether or not the outboard isolation valve is disabled. If the valve is open at the time of the fire it could fail in the open position but the inboard valve is not involved in the fire and closes on demand. It is a requirement that cables for outboard valves located in fire areas of a division different than the division of the valve not be routed through fire areas containing any circuitry associated with the inboard valve of the isolation pair.

9A.6.4.12 Main Control Room Separation

All four divisions are present in the Main Control Room. In the event of a fire the Main Control Room is evacuated and plant shutdown is controlled from the independent divisionally separated Remote Shutdown System. Operators can evacuate the Main Control Room after scramming the reactor. The Safety System and Logic Control (SSLC) automatically actuates the safety systems. The postulated fire assumes loss of all component functions within the Main Control Room, and spurious actuations are considered in the analysis. In order to cool the plant down, the operators can control the nonsafety-related systems from either Remote Shutdown System (RSS) panel, located in separate fire areas within the Reactor Building.

9A.6.5 Comparison to BTP SBLP 9.5-1 and Regulatory Guide 1.189

The ESBWR fire protection design follows the recommendations of BTP SPLB 9.5-1 and Regulatory Guide 1.189 with the following exceptions:

9A.6.5.1 No Fire Detection within Electrical Cabinets in Main Control Room Complex

Section 7.1.4 of BTP SPLB 9.5-1 recommends that electrical cabinets should be protected as described in Regulatory Guide 1.189. Section 6.1.2.2 of Regulatory Guide 1.189 states in part:

"Smoke detectors should be provided in the control room, cabinets, and consoles."[f76][f77]

Consoles and electrical cabinets do not have fire detectors installed inside them.

Justification: The electrical cabinets and consoles contain limited combustibles and are aircooled so that smoke from an interior fire will exhaust to the room. Early warning fire detection, primarily consisting of ionization smoke detectors, is provided in all rooms containing consoles or electrical cabinets. A fire in any single cabinet or console will not disable the capability to safely shut down the plant. Except in the Main Control Room Complex, all safety-related electrical cabinets and consoles are located in divisional rooms, and all divisional rooms are separated from each other by 3 hour fire-rated barriers such that a single fire will not affect electrical cabinets or consoles from multiple divisions. The Main Control Room Complex is continuously manned so that any fire will be quickly detected and manual fire suppression activities would be initiated quickly upon discovery of a fire. In the unlikely event that a fire in the Main Control Room were to require evacuation, use of either the Division I or II Remote Shutdown System (RSS) panels (located remotely from Main Control Room, in the Reactor Building) enable the operators to bring the reactor to a safe shutdown.

9A.6.5.2 No Automatic Fire Suppression in Office Areas of Main Control Room Complex

Section C.8.1.2.c of BTP SPLB 9.5-1 recommends that automatic suppression capability should be provided in the Control Room Complex as described in Regulatory Guide 1.189. Section 6.1.2 of Regulatory Guide 1.189 states in part:

"Peripheral rooms in the control room complex should have automatic water suppression..."

The office spaces contained in the Main Control Room Complex do not have automatic fire suppression systems installed.

Justification: The Main Control Room Complex is considered to be a low risk fire area, due to the lack of high- or medium-voltage equipment or cabling. Interior finishing materials within the

Main Control Room Complex are noncombustible or have a flame spread and smoke developed rating of 25 or less. The amount of transient combustibles within this fire area is limited. Papers within the Main Control Room Complex are stored in file cabinets, bookcases, or other storage locations except when in use. Ionization or photoelectric smoke detectors are installed throughout the Main Control Room Complex to provide early warning of fire during the incipient stage. The Main Control Room Complex is continuously manned so that any fire will be quickly detected and manual fire suppression activities would be initiated quickly upon discovery of a fire. Should manual fire fighting in the Main Control Room Complex be necessary using either portable fire extinguishers or hand held fire hoses, accumulation or drainage of fire water will not affect the ability to safely shutdown the reactor. If the fire water is assumed to transport immediately to the basement of the Control Building, the resulting accumulation of water will not affect safety-related equipment located in the basement. In either case, the fire fighting activities will not prevent the reactor from being safely shutdown.

Finally, in the unlikely event that a fire in the Main Control Room were to require evacuation, use of either the Division I or II Remote Shutdown System (RSS) panel (located remotely from Main Control Room, in the Reactor Building) enable the operators to bring the reactor to a safe shutdown.

9A.6.5.3 No Automatic Fire Suppression Below Raised Floor in Main Control Room Complex

Section C.8.1.2.c of BTP SPLB 9.5-1 recommends cable raceways under raised floors should be reviewed to determine if adequate fire detection and suppression are provided for potential fires in these areas. Section 6.1.2.1 of Regulatory Guide 1.189 states in part:

"...Fully enclosed electrical raceways located in under-floor and ceiling spaces, if over 0.09 m2 (1 sq ft) in cross-sectional area, should have automatic fire suppression inside."

The Main Control Room Complex has a 0.6 meter (2 foot) deep raised floor over a subfloor volume which is used for routing of cables between the electrical cabinets, control panels, computer equipment, and the divisional electrical rooms. Divisional separation of the subfloor cabling is maintained per the requirements of IEEE 384. The subfloor volume includes full fire detection but does not include any automatic fire suppression system.

Justification: The Main Control Room Complex and subfloor volume is considered to be a low risk fire area, due to the lack of high- or medium-voltage equipment or cabling. The characteristics of the subfloor cables are such that the probability of a fire ignition is very low and any fire that were to occur would be self-extinguishing or very slow to spread. No transient combustibles stored in the subfloor volume during normal activities to increase the severity of a possible fire. Ionization smoke detectors are installed throughout the subfloor volume to provide early warning of fire during the incipient stage. The raised floor consists of noncombustible sectional panels can be individually removed to provide fire-fighting access to a subfloor fire. Because the Control Room is continuously manned, manual fire suppression activities would be initiated quickly upon discovery of a fire in the subfloor volume. Since fire resistant cables are required, the amount of water needed to extinguish a fire within the subfloor volume is relatively small. Any water that is introduced into the subfloor volume can be removed by floor drains in the subfloor volume or through the use of temporary portable sump pumps. Accumulation of water in the subfloor volume is limited in depth to less than the raised floor height and will not

adversely affect water sensitive safety-related equipment which is installed above the raised floor. Effectiveness of a permanently installed fire suppression system within the subfloor volume may be somewhat limited due to the relatively small height between raised floor and top of cabling, as well as physical barriers within the subfloor volume to meet IEEE 384 separation criteria. Not including automatic fire suppression within the subfloor volume has the indirect benefit of avoiding the potential for missiles (from gaseous suppression cylinders) or flooding/wetting (from water piping) during maintenance or testing activities to affect safety-related equipment within the Main Control Room Complex.

Finally, in the unlikely event that a fire in the Main Control Room were to require evacuation, use of either the Division I or II Remote Shutdown System (RSS) panel (located remotely from Main Control Room, in the Reactor Building) enable the operators to bring the reactor to a safe shutdown

9A.6.5.4 Diesel Day Tank Capacity within Building

Section C.8.1.8.b of BTP SPLB 9.5-1 recommends that diesel day tanks comply with Regulatory Guide 1.189. Section 6.1.8 of Regulatory Guide 1.189 states in part:

"Day tanks with total capacity up to 4164 L (1100 gallons) may be located in the diesel generator area under the following conditions:

a. The day tank is located in a separate enclosure with fire resistance rating of at least 3 hours"

Based on the large size of the nonsafety-related diesel generators, the capacity of each of the diesel day tanks will likely exceed 4164 L (1100 gallons) to allow enough fuel for at least 8 hours of diesel operation at the maximum load demand and is expected to exceed BTP recommended limits.

Justification: The ESBWR design includes two independent and physically separated nonsafetyrelated diesel generators, either of which are capable of providing the full electrical load for the redundant nonsafety-related electrical buses. Neither diesel generators is necessary to achieve and maintain safe shutdown conditions for the 72 hour period following an accident or fire event. Each day tank is located in the Electrical Building in a dedicated 3 hour fire rated compartment of masonry or concrete construction. There is no safety-related equipment located in the same building as the day tank rooms. The day tank rooms are located in individual fire areas adjacent to the Diesel Generator (DG) rooms and are positioned such that the 3 hour fire rated walls, ceiling, and floor of the day tank room are not common to the other redundant DG.

Each day tank room is protected by a foam water deluge system that can deliver foam to the room for a minimum of 30 minutes without operator intervention. The day tank is seismically designed and supported. Potential ignition sources inside the day tank rooms with enough energy to ignite diesel fuel are limited. Furthermore, the supply of fresh air to support combustion is limited. In the event of a fire, the automatic foam water deluge system is designed to extinguish a fire in this room in 10 minutes. In the unlikely event the day tank were to fail, the entire contents of the day tank plus foam water can be contained in the sunken volume of the day tank room. Additional foam capacity beyond 10 minutes provides added assurance that a postulated fire will be extinguished. In the unlikely event the fire cannot be extinguished, the

day tank room can be isolated by closing doors and dampers to allow the fire to burn out on its own without spreading to other fire areas.

In the event that the fuel oil transfer line from the day tank to the DG were to fail outside of the day tank room, the curbed area within the DG room can accommodate the contents of the day tank plus foam water applied by the preaction foam water automatic sprinkler system. This automatic sprinkler system is designed to extinguish a fire within the DG room within 10 minutes. In the unlikely event the fire is still not extinguished, the DG room can be closed off isolated by closing doors and dampers to allow the fire to burn out on its own without spreading to other fire areas. Alternatively, if the fire brigade is required to fight the fire manually, the curbed area within the DG room can accommodate additional water/foam application from two hand-held foam hose lines before reaching the lowest door opening. The lowest door opening to these rooms are the exterior equipment doors which could be opened if fire fighting activities necessitate so that any overflow would spill outside the building and not spread to other parts of the electrical building. Therefore, any overflow from the sump area of the room will not affect any other equipment, nor will it affect safe shutdown equipment or equipment needed for support of safe shutdown equipment.

9A.6.5.5 Allowing Continued Diesel-Generator Operation During a Fire

Section 8.1.8.c of BTP SPLB 9.5-1 recommends that effects of suppression systems on operating generators should be addressed in the fire hazard analysis. Section 6.1.8 of Regulatory Guide 1.189 states in part:

"Automatic fire suppression should be installed to suppress or control any diesel generator or lubricating oil fires. Such systems should be designed for operation when the diesel is running without affecting the diesel."

The automatic sprinkler systems in the diesel generator rooms are installed to extinguish any fire in those rooms and do not place restrictions on the positioning and direction of the application of the fire suppressant.

Justification: The automatic sprinkler systems used in the diesel generator rooms are designed to prevent inadvertent actuation by utilizing preaction automatic sprinkler type. The sprinkler piping and closed head sprinklers are pneumatically supervised for leakage, and any inadvertent actuation of the deluge valve during testing or maintenance will not result in water release due to the closed sprinkler heads.

Two actuation signals are required to automatically actuate the deluge valve, the first of which will annunciate an alarm to alert the operators to any potential problems. Automatic actuation of the sprinkler system to release water requires three independent events: 1) detection of a specific range of infrared wavelengths, consistent with burning oil, by at least one infrared detector; 2) detection of a significant heat release by at least one heat detector; and, 3) opening of at least one fusible link sprinkler head. Furthermore, each redundant diesel generator has its own dedicated fire detectors and preaction deluge valve for the control of the fire sprinklers in that room, and loss of power to the deluge valve does not cause actuation.

The ESBWR design includes two independent and physically separated nonsafety-related diesel generators, either of which are capable of providing the full electrical load for the redundant nonsafety-related electrical buses. Neither diesel generators is necessary to achieve and maintain

safe shutdown conditions for the 72 hour period following an accident or fire event. The ESBWR design also includes four independent and physically separated safety-related divisions, any two of which are capable of bringing the plant to a safe shutdown in the event of a fire. For design purposes, it is assumed that a fire anywhere in a fire area results in the immediate loss of function of all equipment associated with that division. Even with this conservative assumption, the remaining independent safety-related divisions are available for full utilization by the operators.

9A.6.5.6 No Automatic Fire Suppression in Safety-Related Computer Rooms

Section 8.1.4 of SPLB BTP 9.5-1 recommends protecting computer rooms with fire protection systems as described in Regulatory Guide 1.189. Section 6.1.4 of Regulatory Guide 1.189 states in part:

"Computer rooms for computers performing functions important to safety that are not part of the control room complex should be separated from other areas of the plant by barriers having a minimum fire resistance rating of 3 hours and should be protected by automatic detection and fixed automatic suppression."

Computer rooms containing safety-related equipment do not have fire suppression installed inside them.

Justification: Computer rooms are considered to be low risk fire areas, due to the lack of highor medium-voltage equipment or cabling. Interior finishing materials within computer rooms are noncombustible. The amount of transient combustibles within computer rooms is limited. Papers within computer rooms are stored in file cabinets, bookcases, or other storage locations except when in use.

Ionization smoke detectors are installed throughout computer rooms to provide early warning of fire during the incipient stage. The Main Control Room Complex is continuously manned so that any fire will be quickly detected and manual fire suppression activities would be initiated quickly upon discovery of a fire in a computer room. Should manual fire fighting in a computer room be necessary using either portable fire extinguishers or hand held fire hoses, accumulation or drainage of fire water will not affect the ability to safely shutdown the reactor. If the fire water is assumed to transport immediately to the basement of the building, the resulting accumulation of water will not affect safety-related equipment located in the basement. In either case, the fire fighting activities will not prevent the reactor from being safely shutdown.

Except in the Main Control Room Complex, all safety-related computers are located in divisional rooms, and all divisional rooms are separated from each other by 3 hour fire-rated barriers such that a single fire will not affect computer equipment from multiple divisions. In the unlikely event that a fire in the Main Control Room were to require evacuation, use of either the Division I or II Remote Shutdown System (RSS) panel (located remotely from Main Control Room, in the Reactor Building) enable the operators to bring the reactor to a safe shutdown.

9A.6.6 Comparison to International Building Code

The ESBWR fire protection design follows the IBC requirements with the following exceptions. Nonetheless, these "alternative methods" of fire protection for unsprinklered Reactor, Control, and Fuel Buildings as well as unsprinklered portions of the Turbine and Electrical Buildings would require approval from the building code authority during the building permit process as allowed by Section 104.11 of the IBC. The COL licensee shall obtain approval from the appropriate authority having jurisdiction prior to construction for the "alternative method" of fire protection for unsprinklered buildings which are discussed in the following subsections. Refer to Subsections 9A.7.7-9A.7.11 for COL information.

9A.6.6.1 Underground Structures without Sprinkler Protection

Section 405.3 of the International Building Code (IBC) requires automatic sprinkler protection throughout all underground levels where the lowest level is more than 9.144 m (30.0 ft) below grade. The lowest levels of the Reactor and Fuel Buildings are more than 16 m (52.5 ft) below grade, and the lowest level of the Control Building is more than 12 m (39.4 ft) below grade. In compliance with NFPA 804 and Regulatory Guide 1.189, no sprinkler protection is proposed for these levels. This is acceptable for the following reasons:

- Noncombustible Type I-A concrete construction in these buildings;
- Use of Class A finishes and avoidance of combustible materials where possible;
- Extensive use of 3-hr fire-rated walls and floors which subdivide the buildings; this exceeds the IBC minimum requirement for fire-rated separation of similar occupancies;
- 3-hr fire-rated stairwell enclosures, which exceed both the NFPA 101 and IBC minimum requirements for enclosure of exits and the NFPA 14 minimum requirement for protection of standpipes;
- As shown in Tables 9A.5-1, 9A.5-2, and 9A.5-3, low fire loadings (<1400 MJ/m²) within the underground electrical rooms in the Reactor, Fuel, and Control Buildings;
- As shown in Tables 9A.5-1, 9A.5-2, and 9A.5-3, low fire loadings (<700 MJ/m²) within the unsprinklered underground non-electrical rooms in the Reactor, Fuel, and Control Buildings;
- Complete Class A supervised fire detection throughout the Reactor, Fuel, and Control Buildings, which exceeds the IBC minimum requirement for similar occupancies; these initiate a fire alarm signal to the constantly manned Control Room;
- Complete coverage from Class III standpipe and hose systems, throughout the Reactor, Control, and Fuel Buildings, which exceeds the IBC minimum requirement for similar occupancies;
- Trained industrial fire brigade on-site at all times, which exceeds the IBC minimum requirement for similar occupancies.

9A.6.6.2 Buildings Containing Large Fire Areas, without Sprinkler Protection

Section 903.2.3.1 of the IBC requires automatic sprinkler protection throughout buildings that contain a single Group F-1 occupancy fire area that exceeds 1115 m^2 . The unsprinklered Reactor Building contains fire area F1600 which exceeds 1115 m^2 ; the unsprinklered Fuel Building contains fire area F2100 which exceeds 1115 m^2 ; and the partially sprinklered Turbine Building contains fire area F4100 which exceeds 1115 m^2 .

Additionally, section 903.2.3.3 of the IBC requires automatic sprinkler protection throughout buildings where the combined floor area of all Group F-1 occupancy fire areas exceeds 2230 m². The unsprinklered Reactor Building, unsprinklered Fuel Building, and partially sprinklered Turbine Building each contain multiple F-1 fire areas that cumulatively exceed 2230 m².

In compliance with NFPA 804 and Regulatory Guide 1.189, no sprinkler protection is proposed throughout these buildings. This is acceptable for the following reasons:

- Noncombustible Type I-A concrete construction in these buildings;
- Use of Class A finishes and avoidance of combustible materials where possible;
- Extensive use of 3-hr fire-rated walls and floors which subdivide the buildings; this exceeds the IBC minimum requirement for fire-rated separation of similar occupancies
- 3-hr fire-rated stairwell enclosures, which exceed both the NFPA 101 and IBC minimum requirements for enclosure of exits and the NFPA 14 minimum requirement for protection of standpipes;
- As shown in Tables 9A.5-1 and 9A.5-2, low fire loadings (<700 MJ/m²) within the fire areas F1600 and F2100 in the Reactor and Fuel Buildings;
- As shown in Table 9A.5-4, low fire loadings (<700 MJ/m²) within the unsprinklered portion of the Turbine Building fire area F4100;
- As shown in Table 9A.5-4, automatic fire suppression throughout Turbine Building rooms that contain significant fire hazards (>700 MJ/m²); these consist of sprinkler, deluge, or carbon dioxide flooding systems that each initiate a fire alarm signal to the constantly manned Control Room;
- Complete Class A supervised fire detection throughout the Reactor, Fuel, and Turbine Buildings, which exceeds the IBC minimum requirement for similar occupancies; these initiate a fire alarm signal to the constantly manned Control Room;
- Complete coverage from Class III standpipe and hose systems, throughout the Reactor, Control, and Turbine Buildings, which exceeds the IBC minimum requirement for similar occupancies;
- Trained industrial fire brigade on-site at all times, which exceeds the IBC minimum requirement for similar occupancies;
- Sprinklers installed under the very tall ceilings in fire areas F1600, F2100, and F4100 would be ineffective against a floor level fire; the extreme height would likely prevent sufficient heat from reaching sprinkler heads to actuate them;
- Subdividing fire areas F1600, F2100, and F4100 into fire areas less than 1115 m² size is not feasible due to the large machinery and access requirements in these areas;

9A.6.6.3 Building Containing Fire Areas more than Three Stories Above Grade, without Sprinkler Protection

Section 903.2.3.2 of the IBC requires automatic sprinkler protection throughout buildings that contain a single Group F-1 occupancy fire area that is located more than three stories above grade. Elevation 34000 of the unsprinklered Reactor Building is located more than three stories

above grade. Elevations 22000 and 27000 of the partially sprinklered Electrical Building are both located more than three stories above grade.

In compliance with NFPA 804 and Regulatory Guide 1.189, no sprinkler protection is proposed for these levels. This is acceptable for the following reasons:

- Noncombustible Type I-A concrete construction in these buildings;
- Use of Class A finishes and avoidance of combustible materials where possible;
- Extensive use of 3-hr fire-rated walls and floors which subdivide the buildings; this exceeds the IBC minimum requirement for fire-rated separation of similar occupancies;
- 3-hr fire-rated stairwell enclosures, which exceed both the NFPA 101 and IBC minimum requirements for enclosure of exits and the NFPA 14 minimum requirement for protection of standpipes;
- As shown in Tables 9A.5-1 and 9A.5-6, low fire loadings (<1400 MJ/m²) within the unsprinklered electrical rooms in the Reactor and Electrical Buildings;
- As shown in Tables 9A.5-1 and 9A.5-6, low fire loadings (<700 MJ/m²) within the unsprinklered non-electrical rooms in the Reactor and Electrical Buildings;
- As shown in Table 9A.5-6, automatic fire suppression throughout Electrical Building non-electrical rooms that contain significant fire hazards (>700 MJ/m²); these consist of sprinkler or deluge systems that each initiate a fire alarm signal to the constantly manned Control Room;
- Complete Class A supervised fire detection throughout the Reactor and Electrical Buildings, which exceeds the IBC minimum requirement for similar occupancies; these initiate a fire alarm signal to the constantly manned Control Room;
- Complete coverage from Class III standpipe and hose systems, throughout the Reactor, and Electrical Buildings, which exceeds the IBC minimum requirement for similar occupancies;
- Trained industrial fire brigade on-site at all times, which exceeds the IBC minimum requirement for similar occupancies;
- Sprinklers installed under the very tall ceiling in Elevation 34000 of the Reactor Building would be ineffective against a floor level fire; the extreme height would likely prevent sufficient heat from reaching sprinkler heads to actuate them.

9A.6.6.4 Lack of Fire Fighter Exterior Access Openings, without Sprinkler Protection

Section 903.2.10 of the IBC requires automatic sprinkler protection throughout buildings that do not have $1.9 \text{ m}^2 (20.5 \text{ ft}^2)$ minimum size openings (doors or windows) within each 15 m (49.2 ft) of exterior wall. These openings are intended for fire fighter access into the building during a fire. The exterior walls of the Reactor, Fuel, and Control Buildings do not contain such openings. In compliance with NFPA 804 and Regulatory Guide 1.189, no sprinkler protection is proposed throughout these buildings. This is acceptable for the following reasons:

• Noncombustible Type I-A concrete construction in these buildings;

- Use of Class A finishes and avoidance of combustible materials where possible;
- Extensive use of 3-hr fire-rated walls and floors which subdivide the buildings; this exceeds the IBC minimum requirement for fire-rated separation of similar occupancies;
- 3-hr fire-rated stairwell enclosures, which exceed both the NFPA 101 and IBC minimum requirements for enclosure of exits and the NFPA 14 minimum requirement for protection of standpipes;
- As shown in Tables 9A.5-1, 9A.5-2, and 9A.5-3, low fire loadings (<1400 MJ/m²) within the underground electrical rooms in the Reactor, Fuel, and Control Buildings;
- As shown in Tables 9A.5-1, 9A.5-2, and 9A.5-3, low fire loadings (<700 MJ/m²) within the unsprinklered underground non-electrical rooms in the Reactor, Fuel, and Control Buildings;
- Complete Class A supervised fire detection throughout the Reactor, Fuel, and Control Buildings, which exceeds the IBC minimum requirement for similar occupancies; these initiate a fire alarm signal to the constantly manned Control Room;
- Complete coverage from Class III standpipe and hose systems, throughout the Reactor, Control, and Fuel Buildings, which exceeds the IBC minimum requirement for similar occupancies;
- Trained industrial fire brigade on-site at all times, which exceeds the IBC minimum requirement for similar occupancies;

Adding enough exterior openings to comply with Section 903.2.10 would impose an unacceptable security risk.

9A.7 COL INFORMATION

- 9A.7.1 The COL applicant shall establish fire hazard design acceptance criteria for the Service Water/Water Treatment Building and Service Building (Refer to 9A.1).
- 9A.7.2 The COL applicant shall include drawings showing the fire area separation and fire protection features for the Yard buildings, Service Water/Water Treatment Building, and Service Building (Refer to 9A.2.2).
- 9A.7.3 The COL applicant shall include fire zone drawings for those portions of the Yard except for that associated with Turbine and Electrical Building equipment (Refer to 9A.4.7).
- 9A.7.4 The COL applicant shall design the Service Building fire protection features (Refer to 9A.4.8).
- 9A.7.5 The COL applicant shall design the Service Water/Water Treatment Building fire protection features (Refer to 9A.4.9).
- 9A.7.6 The COL holder shall provide detailed design for piping penetrations in the Reactor Building with equivalent construction to tested wall assemblies when penetrating rated fire barriers, or fire testing will be required. The COL licensee shall provide a reliable design for piping penetrations in the Reactor Building with equivalent construction to tested wall assemblies when rated fire barrier testing is required (Refer to 9A.6.1).
- 9A.7.7 The COL holder shall obtain approval from the appropriate authority having jurisdiction prior to construction for the "alternate method" of fire protection for the unsprinklered Reactor Building, involving underground levels (Refer to 9A.6.6.1), large fire areas (Refer to 9A.6.6.2), three or more stories above grade (Refer to 9A.6.6.3), and lack of exterior access openings for fire department personnel (Refer to 9A.6.6.4).
- 9A.7.8 The COL holder shall obtain approval from the appropriate authority having jurisdiction prior to construction for the "alternate method" of fire protection for the unsprinklered Fuel Building, involving underground levels (Refer to 9A.6.6.1), large fire areas (Refer to 9A.6.6.2), and lack of exterior access openings for fire department personnel (Refer to 9A.6.6.4).
- 9A.7.9 The COL holder shall obtain approval from the appropriate authority having jurisdiction prior to construction for the "alternate method" of fire protection for the unsprinklered Control Building, involving underground levels (Refer to 9A.6.6.1) and lack of exterior access openings for fire department personnel (Refer to 9A.6.6.4).
- 9A.7.10 The COL holder shall obtain approval from the appropriate authority having jurisdiction prior to construction for the "alternate method" of fire protection for the partially sprinklered Turbine Building, involving large fire areas (Refer to 9A.6.6.2).
- 9A.7.11 The COL holder shall obtain approval from the appropriate authority having jurisdiction prior to construction for the "alternate method" of fire protection for the partially sprinklered Electrical Building, involving three or more stories above grade (Refer to 9A.6.6.3).