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CP-201101009
Log # TXNB-11050

Ref. # 10 CFR 52

July 28, 2011

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
ATTN: David B. Matthews, Director
Division of New Reactor Licensing

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4
DOCKET NUMBERS 52-034 AND 52-035
SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
NO. 4206 (SECTION 12.3-12.4)

Dear Sir:

During a conference call on May 24, 2011, the NRC staff provided clarifying feedback on Luminant's response to RAI No. 4206 regarding the dike surrounding the condensate storage tank and the radiological contents of the auxiliary boiler building. In response to that feedback, Luminant Generation Company LLC (Luminant) submits herein supplemental information for the response to Request for Additional Information (RAI) No. 4206 (CP RAI #135) for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4.

Should you have any questions regarding this response, please contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com) or me.

The only commitment in this letter is captured on page 2 and will be incorporated in system operating procedures.

I state under penalty of perjury that the foregoing is true and correct.

Executed on July 28, 2011.

Sincerely,

Luminant Generation Company LLC

Rafael Flores *for*

Attachment: Supplemental Response to Request for Additional Information No. 4206 (CP RAI #135)

*DO90
MRO*

Regulatory Commitments in this Letter

This communication contains the following new or revised commitment which will be completed or incorporated into the CPNPP licensing basis as noted:

<u>Number</u>	<u>Commitment</u>	<u>Due Date/Event</u>
8286	<p>The supplemental information for the response to CP RAI #135 Question 12.03-12.04-11 S03 states:</p> <p>When the auxiliary boiler is used for HVAC heating, the condensate from the HVAC heaters is sampled and analyzed periodically to determine the level of contamination.</p> <p>The condensate makeup piping from the auxiliary steam drain tank inside the A/B to the auxiliary boiler is sampled and analyzed periodically for levels of contamination when the auxiliary boiler is being used. If contamination exceeds a predetermined set point, the steam supply line is isolated and appropriate actions are taken before the auxiliary boiler is restarted.</p>	System Operating Procedures

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SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 4206 (CP RAI #135)

SRP SECTION: 12.03-12.04 - Radiation Protection Design Features

QUESTIONS for Health Physics Branch (CHPB)

DATE OF RAI ISSUE: 1/29/2010

QUESTION NO.: 12.03-12.04-11 S03

CST Overflow Dike Liner

The supplemental response to **RAI 4206 Question 12.03-12.04-11** dated April 13th 2011, stated that the CST was surrounded by a dike, and that the overflow from the CST was into the diked area. However, there was no discussion about the 40 CFR 265 Subpart K—Surface Impoundments – requirements. Based on a response to a similar issue (with a waste pond), the following information was provided.

The evaporation pond is equipped with a leak detection system. In the event a leak is developed, a signal is sent to the Main Control Room and the Radwaste Control Room for operator actions, which may include removing the contents from the pond to facilitate inspection and repair as required. The pond liner is inspected regularly to determine liner integrity with respect to the liners and their seams. In the event of punctures and/or rupture and repair is required, the pond contents are removed, and the pond is rinsed before repair is performed.

The evaporation pond is designed and constructed in accordance with the following standards (others may be applicable as the design is finalized):

- Texas Commission of Environmental Quality (TCEQ)
- TCEQ 330, Municipal Solid Waste TCEQ 217.203, Design Criteria for Natural Treatment Facilities
- American Society for Testing and Materials (ASTM)
- ASTM D3020, Specification for Polyethylene and Ethylene Copolymer Plastic Sheeting for Pond, Canal and Reservoir Lining
- ASTM D5514-06, Standard Test Method of Large Scale Hydrostatic Puncture Testing of Geo-synthetics
- ASTM D7002-03, Standard Practice for Leak Location on Exposed Geo-membranes Using the Water Puddle System

The evaporation pond is designed and constructed to contain treated effluent that is contaminated with radioactive nuclides. The pond opens to the environment to allow the tritiated water to naturally evaporate. The evaporation pond is constructed with two layers of High Density

Polyethylene material suitable for this service. The High Density Polyethylene is a minimum of 60 mils thickness. A drainable mesh mat, with a minimum thickness of 30 mils, is provided in between the two layers of High Density Polyethylene to allow movement of the liquid due to leakage of the content from the top layer of High Density Polyethylene.

The evaporation pond is constructed with a total depth of six feet, with four feet below grade and two feet freeboard. A berm is constructed to prevent surface water from entering the pond during rainy seasons.

The evaporation pond is constructed with a layer of clay with permeability less than $1E-7$ centimeter per second to support the pond. The overall construction meets or exceeds the requirements for waste water pond stipulated by TCEQ.

Some TCEQ requirements are as follows:

- In situ clay soils or placed and compacted meeting:
 1. more than 30% passing a Number 200 mesh sieve
 2. liquid limit greater than 30%
 3. plasticity index greater than 15
 4. a minimum thickness of two feet
 5. Permeability equal to or less than 1×10^{-7} centimeter per second
- Soil compaction will be 95% standard proctor density at optimum moisture content
- The pond is protected from inundation by a ten-year 2 hour rainfall event

Does Luminant intend to provide similar information for the dike surrounding the CST?

ANSWER:

The condensate storage tank (CST) is installed on a steel-reinforced concrete foundation with a concrete retaining wall (dike) surrounding the tank similar to and consistent with other non-safety structures and facilities. The foundation and wall are coated with epoxy providing smooth surfaces to facilitate draining leakage or overflow to a sump. In addition, the concrete foundation beneath the tank is sloped towards the sump within the dike. The sump has liquid detection instrumentation and alarms for operator action to initiate the collection of samples of the liquid. If the liquid is determined to be non-contaminated it will be discharged, and if it is determined to be contaminated, it will be transferred to the Liquid Waste Management System for treatment. In either case, the liquid is drained to a sump within the adjacent pump house to facilitate pump-out for disposal or treatment. This design is based on industry standards, codes (e.g., ACS 318), and practices. The dike surrounding the CST is not considered a surface impoundment and its foundation structure is different from soil compaction.

During a clarification conference call, NRC inquired about the detailed design of the CST with respect to the infiltration of rain and snow. The CST has a painted carbon steel cover that extends from the top of the tank to slightly beyond the outer diameter of the dike in order to reduce the collection of rain and snow inside the dike. Liquid inside the dike is sampled for contamination and removed for disposal or treatment as discussed above. DCD Subsection 9.2.6.2.4 and Table 12.3-8 are updated to include this information and markups provided by MHI are attached to this answer. These changes will be included in the next revision to the DCD.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

See marked-up DCD Revision 3 pages 9.2-53 and 12.3-67.

supplies demineralized water to various plant users, as shown in Figure 9.2.6-1. Design parameters of the demineralized water transfer pumps are shown in Table 9.2.6-1

9.2.6.2.3 Deaeration Package

The deaeration package reduces the oxygen concentration of the demineralized water.

9.2.6.2.4 Condensate Storage Tank

The CST is the normal source of water for make up to certain plant systems including the main condenser. The CST is a source of water for supply to various locations such as areas near equipment that need water for maintenance and drain tanks. Makeup to the CST is provided from the DWST. The CST overflow goes to a dike which is provided to control the release of chemicals and radioactive materials.

The CST is installed on a steel-reinforced concrete foundation with a concrete retaining wall (dike) surrounding the tank. The foundation and wall are coated with epoxy providing smooth surfaces to facilitate draining leakage or overflow to a sump. In addition, the concrete foundation beneath the tank is sloped towards the sump within the dike. The sump has liquid detection instrumentation and alarms for operator action to initiate the collection of samples of the liquid. If the liquid is determined to be non-contaminated it will be discharged, and if it is determined to be contaminated, it will be transferred to the Liquid Waste Management System (LWMS) for treatment. In either case, the liquid is drained to a sump within the adjacent pump house to facilitate pump-out for disposal or treatment. The CST has a painted carbon steel cover that extends from the top of the tank to slightly beyond the outer diameter of the dike in order to minimize the collection of rain and snow inside the dike. Liquid inside the dike is sampled for contamination and removed for disposal or treatment.

RCOL2_12.03-
12.04-11 S03

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12.04-11 S02

The transfer piping running between the CST and the hotwell is single-walled welded stainless steel piping in a coated trench with removable but sealed covers. This design is supplemented by periodic hydrostatic or pressure testing of pipe segments, instrument calibration, and when required, visual inspection and maintenance of piping, trench and instrument integrity, in compliance with the guidance of RG 4.21 and industry operating experience. Design and system features addressing RG 4.21 are captured in Section 12.3.1.3 of the DCD.

Design parameters of the CST are shown in Table 9.2.6-1.

The water chemistry in the CST is maintained in accordance with Table 9.2.6-2.

9.2.6.2.5 Condensate Transfer Pumps

Two 100% capacity condensate transfer pumps are provided. The condensate transfer pumps take suction from the CST and supply condensate to the condenser hotwell and various other users throughout the plant as shown in Figure 9.2.6-1. Design parameters of the condensate transfer pumps are shown in Table 9.2.6-1.

SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 4206 (CP RAI #135)

SRP SECTION: 12.03-12.04 - Radiation Protection Design Features

QUESTIONS for Health Physics Branch (CHPB)

DATE OF RAI ISSUE: 1/29/2010

QUESTION NO.: 12.03-12.04-11 S03

Section 9A.3.114 Auxiliary Boiler Description

US-APWR FSAR Tier 2 Revision 2, Table 11.1-9 "Realistic Source Terms" states that a typical activity of tritium in the secondary side water and steam is 0.001 μ Ci/g. As noted in Table 11.1-4 "Parameters Used to Calculate Secondary Coolant Activity" which is based on 150 gallons per day of primary to secondary leakage. Also, information from currently operating plants shows that in the absence of primary to secondary leakage, tritium activity is still present in secondary side water and steam at concentrations determined by the rate of hydrogen perfusion through the SG U-Tubes, the amount of secondary side reuse and the secondary side make up rate. This information shows that 2,000 to 100,000 pico Curies/liter of tritium will be present in the secondary side steam/condensate fluid. As the US-APWR design employs full reuse of SG blowdown water and anticipated secondary side make up rates are expected to be low, the secondary side tritium concentration is likely to be higher than in many of the current generation of PWR plants. Experience from currently operating plants, shows that leakage from these types of systems will represent an operational concern, for plants subject to the requirements of 10 CFR 20.1406. Based on the realistic source term information provided in the DCD, the Condensate and Feedwater System, Main Steam Supply System (MSS), Steam Generator Blowdown System (SGBDS) and Auxiliary Steam Supply System (ASSS) are examples of systems that are expected to contain low but detectable concentrations of radioactive material.

US-APWR FSAR Tier 2 Revision 2, Figure 10.4.11 "Auxiliary Steam Supply System Piping and Instrumentation Diagram" shows the makeup water supply to the ASSS as the Condensate Storage Tank, which as discussed is expected to contain radioactive material in the form of tritium, and possibly, low concentrations of fission and activation product.

However, CPNPP FSAR Revision 1 section 9A.3.114 "Miscellaneous Plant Support Structures", identifies the auxiliary boiler building as one of the miscellaneous plant support structures. The paragraph labeled "Radioactive Release to Environment Evaluation", states "The miscellaneous CPNPP Units 3 and 4 support structures are non-radiological areas with no piping system containing radioactive material and no other radioactive material located within the areas."

Consistent with the requirements of 10 CFR 20.1406, the guidance contained in RG 4.21, and the system description and radioactivity concentration values described in the US-APWR DCD Tier 2 chapters 10 and 11; FSAR Revision 1 section 9A.3.114 would have to be revised to accurately describe the radiological contents of the auxiliary boiler building.

ANSWER:

As discussed during the NRC clarification conference call, makeup water to the ASSS can either be demineralized water or secondary condensate. Thus, the auxiliary boiler is expected to contain tritiated water and possibly low concentrations of radioactive materials due to primary-to-secondary leakage in the steam generators that is carried over to the condenser. FSAR Subsection 9A.3.114 has been revised to delete the reference to the auxiliary boiler building as being non-radioactive.

During the clarification conference call, NRC also inquired about the Liquid Waste Management System (LWMS) effluent piping going through the Power Source Building (PS/B). MHI reviewed the US-APWR design with respect to routing contaminated piping through the PS/B and decided to remove the statements that the PS/B does not contain contaminated piping. The LWMS effluent piping is single-wall carbon steel routed through the PS/B consistent with the LWMS piping routed through the Turbine Building. The DCD is revised to reflect this change and markups provided by MHI are attached to this answer. These changes will be included in the next revision to the DCD.

NRC also inquired about using auxiliary steam for HVAC air heating and domestic water heating. The auxiliary boiler provides heating steam for process and utility heating as required by site-specific conditions during startup and refueling operations only. When the auxiliary boiler is used for HVAC heating, the condensate from the HVAC heaters is sampled and analyzed periodically to determine the level of contamination. The condensate leaving the HVAC system is transferred to the auxiliary steam drain tank and then routed back to the auxiliary boiler.

The condensate makeup piping from the auxiliary steam drain tank inside the A/B to the auxiliary boiler is sampled and analyzed periodically for levels of contamination when the auxiliary boiler is being used. If contamination exceeds a predetermined set point, the steam supply line is isolated and appropriate actions are taken before the auxiliary boiler is restarted.

Impact on R-COLA

See marked-up FSAR Revision 1 page 9A-17.

Impact on S-COLA

None.

Impact on DCD

See marked-up DCD Revision 3 pages 9A-203, 9A-204, 9A-207, 9A-209, 9A-211, 9A-213, 9A-214, 9A-217, 9A-219, 9A-221, 9A-223, 9A-225, 9A-226, 9A-228, 9A-230, 9A-231, 9A-233, 9A-235, 9A-236, 9A-238, 9A-240, 9A-241, 9A-243, 9A-244, 9A-245, and 9A-246.

Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
Part 2, FSAR

Fire detection and suppression system features vary for the miscellaneous plant support structures according to their importance to personnel safety, continued operation, and the influence of applicable NFPA codes and standards, building code requirements, and nuclear plant property insurer's requirements or recommendations.

Smoke Control Features

Smoke control features are provided for the miscellaneous plant support structures according to building code requirements and personnel safety concerns. Additional smoke removal in these structures can be provided by portable fans units and ducting by the plant fire brigade of standard firefighting practices.

Fire Protection Adequacy Evaluation

Based on the compliance with accepted industry practices, the fire protection features provided for the miscellaneous CPNPP Units 3 and 4 structures are deemed adequate for the fire hazards present.

Fire Protection System Integrity

Fire protection systems provided for the miscellaneous plant structures are designed, installed, tested, and maintained in accordance with applicable NFPA codes and standards. This assures a high degree of system integrity.

CP COL 9.5(2) Safe Shutdown Evaluation

The miscellaneous CPNPP Units 3 and 4 structures do not contain any safety-related or safe-shutdown features. The structures are located such that they do not pose an unacceptable fire exposure to any safety-related or safe-shutdown structure, system, or component. As such, a fire in any of the miscellaneous CPNPP Units 3 and 4 support structure will not compromise the ability to obtain safe plant shutdown.

Radioactive Release to Environment Evaluation

The miscellaneous CPNPP Units 3 and 4 support structures, other than the auxiliary boiler building, are non-radiological areas with no piping system containing radioactive material and no other radioactive material located within the areas. As such, any fire that could occur within one of the site support structures is not deemed capable of producing a radioactive release."

RCOL2_12.03-1
2.04-11 S03

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.105 FA3-102 B-Essential Chiller Unit & Pump Room

Figure 9A-11 shows the location of this fire area on the west side of the east PS/B. This fire area consists of a single fire zone designated as FA3-102-01. This room contains B-essential chilled water system equipment. There is sufficient combustible fire loading from the electrical cables, lube oil, and panels associated with the chilled water unit to result in a maximum anticipated fire loading of $3.1E+04$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train B.

Fire Detection and Suppression Features

FA3-102-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries. Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Fire Protection Adequacy Evaluation

The fire area boundaries are constructed with concrete walls in excess of 8 inches thick and 3-hour rated fire doors and protected penetrations and openings are provided for fire confinement. HVAC ductwork passing into this area is equipped with fire dampers in accordance with the guidance of NFPA 90A.

The combustible loading in this area is light and a fire of sufficient size and intensity to compromise the fire barrier boundaries is not deemed credible.

The fire protection system for this room is designed in accordance with NFPA 72 and 14, and is the combination of smoke detectors and manual hose stations. Based on the

expected fire hazards within the compartment during normal operation and the maximum expected fire during equipment maintenance, the 3-hour fire rated boundaries of the compartment are more than sufficient to contain any unsuppressed fire that can be expected to occur within the compartment. On this basis, there is adequate fire protection provided for this compartment (fire area).

Fire Protection System Integrity

The fire protection capability for this area is provided from manual hose streams applied by the plant fire brigade. The standpipe is designed to code (NFPA 14) and unlikely to release water except after extreme seismic events. Since this is a safety-related area, all fire protection system piping is seismically supported to prevent its falling on safety-related equipment during an event and causing damage. Unintended operation of the fire suppression activity is not expected since deliberate manual activation is required. In the event of a fire, electrical cables and equipment in the area would be protected from significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical systems of safe-shutdown function.

- B-Essential Chilled Water system
- B-Essential Chiller Unit Area HVAC System
- B-Safety Control System

Since this fire area is separated from the Train A, C, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.106 FA3-103 B-Class 1E GTG Room

Figures 9A-11 and 9A-12 show the location of this fire area on the west side of the east PS/B adjacent to the south portion of the R/B. This fire area consists of three individual fire zones, FA3-103-01, B-GTG Auxiliary Component room, FA3-103-02, B-GTG Fuel Piping Area, and FA3-103-03, B-Class 1E GTG room. B-GTG Auxiliary Component room has combustible fire loading that is not expected to exceed $8.8E+02$ Btu/ft². FA3-103-02

Since this fire area is separated from the Train A, C, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.107 FA3-104 A-Class 1E GTG Room

Figures 9A-11 and 9A-12 show the location of this fire area on the west side of the east PS/B adjacent to the south portion of the R/B. This fire area consists of three individual fire zones, FA3-104-01, A-GTG Auxiliary Component room, FA3-104-02, A GTG Fuel Piping Area, FA3-104-03 A-Class 1E GTG room. A-GTG Auxiliary Component room has combustible fire loading that is not expected to exceed $8.8E+02$ Btu/ft². FA3-104-02 has combustible fire loading not expected to exceed $9.3E+02$ Btu/ft². FA3-104-03 has combustible loading from the gas turbine package (including fuel in the day tank) results in a maximum anticipated fire loading of $2.5E+05$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train A.

Fire Detection and Suppression Features

FA3-104-01 and FA3-104-02 are provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

FA3-104-03 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from wet-pipe automatic sprinkler system. Secondary suppression is provided from manual fire hose station.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical systems of safe-shutdown function.

- A-GTG system
- A-Class 1E Power system
- A-Class 1E Battery System
- A-Essential Chiller Unit Area HVAC System
- A-Essential Chilled Water System
- A-Class 1E Battery Room HVAC System
- A-Safety Control System

Since this fire area is separated from the Train B, C, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.108 FA3-105 A-AAC GTG Room

Figures 9A-11 and 9A-12 show the location of this fire area on the east side of the east PS/B. This fire area consists of three individual fire zones, FA3-105-01, A-AAC Power Source Starter Battery Room, FA3-105-02 A-AAC GTG room and FA3-105-03 A-AAC Fuel Piping Area. The FA3-105-01 zone has the combustible fire loading that is not expected to exceed $1.2\text{E}+04$ Btu/ft². FA3-105-02 has the combustible loading from the gas turbine package (including fuel in the day tank) results in a maximum anticipated fire loading for the room of $3.0\text{E}+05$ Btu/ft². FA3-105-03 has the combustible loading not expected to exceed $1.9\text{E}+03$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with non-safety train.

during a design basis earthquake. The manual fire hose are in an alternate area and can only discharge water by deliberate manual action. The fire suppression system is designed to contain the pressure of the water and sprinkler heads are designed to only discharge water if their thermal element indicated a fire condition. Should the sprinkler system inadvertently discharge, the gas turbine is protected by its enclosure. On this basis, there is little potential for an unintended actuation of the fire suppression system adversely affecting the operation of the plant.

The fire protection capability for this area is provided from manual hose streams applied by the plant fire brigade. The standpipe is designed to code (NFPA 14) and unlikely to release water except after extreme seismic events. Since this is a safety-related area, all fire protection system piping is seismically supported to prevent its falling on safety-related equipment during an event and causing damage. Unintended operation of the fire suppression activity is not expected since deliberate manual activation is required. In the event of a fire, electrical cables and equipment in the area would be protected from significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has no potential to damage the ability of safe-shutdown function, because they are not installed in this fire area. The fire in this fire area, therefore, will not adversely impact the ability to achieve and maintain safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.109 FA3-106 FA3-106 Area

Figures 9A-11 shows the location of this fire area on the east PS/B. The FA3-106 provides access from the R/B to the train A and B essential chiller unit and pump room, the train A and B GTG auxiliary component rooms. The corridor has the combustible fire loading due to potential transient material that is not expected to exceed $6.9E+01$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train B.

Fire Detection and Suppression Features

FA3-106-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from

- B-Safety Control SyStem

Since this fire area is separated from the Train A, C, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

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9A.3.110 FA3-108 C-Essential Chiller Unit & Pump Room

Figure 9A-11 shows the location of this fire area on the east side of the west PS/B. This fire area consists of a single fire zone designated as FA3-108-01. This room contains C-essential chilled water system equipment. There is sufficient combustible fire loading from the electrical cables, lube oil, and panels associated with the chilled water unit to result in a maximum anticipated fire loading of 3.1E+04 Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features providing at least 3-hour fire resistance.

The area is identified as being associated with safety train C.

Fire Detection and Suppression Features

FA3-108-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries. Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Fire Protection Adequacy Evaluation

The fire area boundaries are constructed with concrete walls in excess of 8 inches thick and 3-hour rated fire doors and protected penetrations and openings are provided for fire

confinement. HVAC ductwork passing into this area is equipped with fire dampers in accordance with the guidance of NFPA 90A.

The combustible loading in this area is light and a fire of sufficient size and intensity to compromise the fire barrier boundaries is not deemed credible.

The fire protection system for this room is designed in accordance with NFPA 72 and 14, and is the combination of smoke detectors and manual hose stations. Based on the expected fire hazards within the compartment during normal operation and the maximum expected fire during equipment maintenance, the 3-hour fire rated boundaries of the compartment are more than sufficient to contain any unsuppressed fire that can be expected to occur within the compartment. On this basis, there is adequate fire protection provided for this compartment (fire area).

Fire Protection System Integrity

The fire protection capability for this area is provided from manual hose streams applied by the plant fire brigade. The standpipe is designed to code (NFPA 14) and unlikely to release water except after extreme seismic events. Since this is a safety-related area, all fire protection system piping is seismically supported to prevent its falling on safety-related equipment during an event and causing damage. Unintended operation of the fire suppression activity is not expected since deliberate manual activation is required. In the event of a fire, electrical cables and equipment in the area would be protected from significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical systems of safe-shutdown function.

- C-Essential Chilled Water system
- C-Essential Chiller Unit Area HVAC System
- C-Safety Contrl System

Since this fire area is separated from the Train A, B, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

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- C-Essential Chilled Water System
- C-Safety Control System

Since this fire area is separated from the Train A, B, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.112 FA3-110 D-Essential Chiller Unit & Pump Room

Figure 9A-11 shows the location of this fire area on the west side of the east PS/B. This fire area consists of a single fire zone designated as FA3-109-01. This room contains D-essential chilled water system equipment. There is sufficient combustible fire loading from the electrical cables, lube oil, and panels associated with the chilled water unit to result in a maximum anticipated fire loading of $3.1E+04$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features providing at least 3-hour fire resistance.

The area is identified as being associated with safety train D.

Fire Detection and Suppression Features

FA3-110-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries. Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.113 FA3-111 D-Class 1E GTG Room

Figures 9A-11 and 9A-12 show the location of this fire area on the east side of the west PS/B adjacent to the south portion of the R/B. This fire area consists of three individual fire zones, FA3-111-01, D-GTG Auxiliary Component room, FA3-111-02, D-GTG Fuel Piping Area, and FA3-111-03, D-Class 1E GTG room. D-GTG Auxiliary Component room has combustible fire loading that is not expected to exceed $8.8E+02$ Btu/ft². FA3-111-02 has combustible fire loading not expected to exceed $1.9E+03$ Btu/ft². FA3-111-03 D-Class 1E GTG room has combustible loading from the gas turbine package (including fuel in the day tank) results in a maximum anticipated fire loading of $2.5E+05$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train D.

Fire Detection and Suppression Features

FA3-111-01, FA3-111-02 are provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

FA3-111-03 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from wet-pipe automatic sprinkler system. Secondary suppression is provided from manual fire hose station.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries. Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Fire Protection Adequacy Evaluation

The fire area boundaries are constructed with concrete walls in excess of 8 inches thick and 3-hour rated fire doors and protected penetrations and openings are provided for fire

-
- D-Class 1E Power system
 - D-Class 1E Battery System
 - D-Essential Chiller Unit Area HVAC System
 - D-Class 1E Battery Room HVAC System
 - D-Essential Chilled Water System
 - D-Safety Control System

Since this fire area is separated from the Train A, B, and C areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.114 FA3-112 FA3-112 Area

Figure 9A-11 shows the location of this fire area on the west PS/B. The FA3-112 provides access from the R/B to the train C and D essential chiller unit and pump room, the train C and D GTG Auxiliary Component rooms. The corridor has the combustible fire loading due to potential transient material that is not expected to exceed $6.9E+01$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train C.

Fire Detection and Suppression Features

FA3-112-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

The fire area is formed with 3-hour fire rated barriers whose penetrations and openings that are compatible with the 3-hour fire rating. This provides confinement for any smoke

shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

~~This area is located in the PS/B which is not a radiological area. Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.115 FA3-113 B-AAC GTG Room

Figures 9A-11 and 9A-12 show the location of this fire area on the west side of the west power source building. This fire area consists of three individual fire zones, FA3-113-01 B-AAC Power Source Starter Battery Room and FA3-113-02 B-AAC GTG room and FA3-113-03, B-AAC Fuel Piping Area. The FA3-113-01 zone has the combustible fire loading that is not expected to exceed $1.2E+04$ Btu/ft². FA3-113-02 has the combustible loading from the gas turbine package (including fuel in the day tank) results in a maximum anticipated fire loading for the room of $3.0E+05$ Btu/ft². FA3-113-03 has combustible loading not expected exceed $1.9E+03$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with non-safety train.

Fire Detection and Suppression Features

FA3-113-01 and FA3-113-03 are provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

FA3-113-02 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from wet-pipe automatic sprinkler system. Secondary suppression is provided from manual fire hose station.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries. Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Safe Shutdown Evaluation

A fire in this area has no potential to damage the ability of safe-shutdown function, because they are not installed in this fire area. The fire in this fire area, therefore, will not adversely impact the ability to achieve and maintain safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.116 FA3-114 Cable Tray Space

Figure 9A-12 shows the location of this fire area on the west PS/B. This fire area consists of a single fire zone designated as FA3-114-01. This room is used for cable tray routing within the PS/B. The high voltage, low voltage, control and instrumentation cables routed through the fire area are non-divisional cables associated with main turbine operation.

Overall fire loading within the area is not expected to exceed $1.0E+05$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with non-safety train.

Fire Detection and Suppression Features

FA3-114-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries. Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Fire Protection Adequacy Evaluation

The fire area is constructed with concrete walls in excess of 8 inches thick and provided with a fire door to the room to provide complete isolation of the room. All openings and penetrations into the fire area are protected to provide complete isolation in the event of a fire.

The major fire threat to this room is from the cables and the transient combustibles associated with maintenance activities during equipment outages. The fire protection system for this room is designed in accordance with NFPA 72 and 14, and is the combination of smoke detectors and manual hose stations.

The area is provided with automatic fire detection which alarms upon high smoke concentration and summons plant fire brigade. Based on the expected fire hazards within the compartment during normal operation and the maximum expected fire during equipment maintenance, the 3-hour fire rated boundaries of the compartment are more than sufficient to contain any unsuppressed fire that can be expected to occur within the fire area. On this basis, there is adequate fire protection provided for this fire area.

Fire Protection System Integrity

The fire protection capability for this area is provided from manual hose streams applied by the plant fire brigade. The standpipe is designed to code (NFPA 14) and unlikely to release water except after extreme seismic events. Since this is a safety-related area, all fire protection system piping is seismically supported to prevent its falling on safety-related equipment during an event and causing damage. Unintended operation of the fire suppression activity is not expected since deliberate manual activation is required. In the event of a fire, electrical cables and equipment in the area would be protected from significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has no potential to damage the ability of safe-shutdown function, because they are not installed in this fire area. The fire in this fire area, therefore, will not adversely impact the ability to achieve and maintain safe-shutdown.

Radioactive Release to Environment Evaluation

The PS/B is a non-radiological area and no radiological material is located in this fire zone. Therefore, a fire within the cable tray space area would not result in a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.117 FA3-115 A-Class 1E Battery Room

Figure 9A-11 shows the location of this fire area on the east side of east PS/B. This fire area consists of a single fire zone designated as FA3-115-01. This room contains the train A batteries. The fire loading due to this combustible content is not expected to exceed $1.4E+05$ Btu/ft².

The borders of this fire area are constructed using construction techniques and material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train A.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical systems of safe-shutdown function.

- A-Class 1E Battery
- A-Class 1E Power system

Since this fire area is separated from the Train B, C, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.118 FA3-116 B-Class 1E Battery Room

Figure 9A-11 shows the location of this fire area on the east side of east PS/B. This fire area consists of a single fire zone designated as FA3-116-01. This room contains the train B batteries. The fire loading due to this combustible content is not expected to exceed $1.4E+05$ Btu/ft².

The borders of this fire area are constructed using construction techniques and material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train B.

Fire Detection and Suppression Features

FA3-116-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.119 FA3-117 A-Class 1E Battery Charger Room

Figure 9A-11 shows the location of this fire area on the east side of the east PS/B. This fire area consists of a single fire zone designated as FA3-117-01. This room contains the train A DC control center, inverter and transformer (battery charger) electrical panel, instruments and controls, with low voltage and control electrical cables associated with battery charging. The fire loading due to this combustible content is not expected to exceed $5.7E+04$ Btu/ft².

The borders of this fire area are constructed using construction techniques and material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train A.

Fire Detection and Suppression Features

FA3-117-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries. Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Fire Protection Adequacy Evaluation

The fire area boundaries are constructed with concrete walls in excess of 8 inches thick and 3-hour rated fire doors and protected penetrations and openings are provided for fire confinement. HVAC ductwork passing into this area is equipped with fire dampers in accordance with the guidance of NFPA 90A.

The combustible loading in this area is light and a fire of sufficient size and intensity to compromise the fire barrier boundaries is not deemed credible.

The fire protection system for this room is designed in accordance with NFPA 72 and 14, and is the combination of smoke detectors and manual hose stations. Based on the expected fire hazards within the compartment during normal operation and the maximum expected fire during equipment maintenance, the 3-hour fire rated boundaries of the compartment are more than sufficient to contain any unsuppressed fire that can be expected to occur within the compartment. On this basis, there is adequate fire protection provided for this compartment (fire area).

Fire Protection System Integrity

The fire protection capability for this area is provided from manual hose streams applied by the plant fire brigade. The standpipe is designed to code (NFPA 14) and unlikely to release water except after extreme seismic events. Since this is a safety-related area, all fire protection system piping is seismically supported to prevent its falling on safety-related equipment during an event and causing damage. Unintended operation of the fire suppression activity is not expected since deliberate manual activation is required. In the event of a fire, electrical cables and equipment in the area would be protected from significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following system and safe-shutdown function..

- A,B-Class 1E Power system

Since this area is separated from C and D Class 1E Power System by 3-hour fire barriers, two train equipment in other areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of achieving safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.120 FA3-118 B-Class 1E Battery Charger Room

Figure 9A-11 shows the location of this fire area on the east side of the east PS/B. This fire area consists of a single fire zone designated as FA3-118-01. This room contains the train B DC control center, inverter and transformer (battery charger) electrical panel, instruments and controls, with low voltage and control electrical cables associated with battery charging. The fire loading due to this combustible content is not expected to exceed $6.0E+04$ Btu/ft².

significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical system of safe-shutdown function.

- B-Class 1E Power system

Since this fire area is separated from the Train A, C, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.121 FA3-119 Spare Battery Charger-1 Room

Figure 9A-11 shows the location of this fire area on the middle of the east PS/B. This fire area consists of a single fire zone designated as FA3-119-01. This room contains the train N DC control center, inverter and transformer (battery charger) electrical panel, instruments and controls, with low voltage and control electrical cables associated with battery charging. The fire loading due to this combustible content is not expected to exceed $6.6E+04$ Btu/ft².

The borders of this fire area are constructed using construction techniques and material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train A

Fire Detection and Suppression Features

FA3-119-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.122 FA3-120 C-Class 1E Battery Room

Figure 9A-11 shows the location of this fire area on the west side of west PS/B. This fire area consists of a single fire zone designated as FA3-120-01. This room contains the train C batteries. The fire loading due to this combustible content is not expected to exceed $1.4E+05$ Btu/ft².

The borders of this fire area are constructed using construction techniques and material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train C.

Fire Detection and Suppression Features

FA3-120-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries. Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Fire Protection Adequacy Evaluation

The fire area boundaries are constructed with concrete walls in excess of 8 inches thick and 3-hour rated fire doors and protected penetrations and openings are provided for fire confinement. HVAC ductwork passing into this area is equipped with fire dampers in accordance with the guidance of NFPA 90A.

The combustible loading in this area is heavy but not comprised highly combustible materials and a fire of sufficient size and intensity to compromise the fire barrier boundaries is not deemed credible.

The fire protection system for this room is designed in accordance with NFPA 72 and 14, and is the combination of smoke detectors and manual hose stations. Based on the

expected fire hazards within the compartment during normal operation and the maximum expected fire during equipment maintenance, the 3-hour fire rated boundaries of the compartment are more than sufficient to contain any unsuppressed fire that can be expected to occur within the compartment. On this basis, there is adequate fire protection provided for this compartment (fire area).

Fire Protection System Integrity

The fire protection capability for this area is provided from manual hose streams applied by the plant fire brigade. The standpipe is designed to code (NFPA 14) and unlikely to release water except after extreme seismic events. Since this is a safety-related area, all fire protection system piping is seismically supported to prevent its falling on safety-related equipment during an event and causing damage. Unintended operation of the fire suppression activity is not expected since deliberate manual activation is required. In the event of a fire, electrical cables and equipment in the area would be protected from significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical systems of safe-shutdown function.

- C-Class 1E Battery
- C-Class 1E Power system

Since this fire area is separated from the Train A, B, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

RCOL2_12.03-
12.04-11 S03

9A.3.123 FA3-121 D-Class 1E Battery Room

Figure 9A-11 shows the location of this fire area on the west side of west PS/B. This fire area consists of a single fire zone designated as FA3-121-01. This room contains the train D batteries. The fire loading due to this combustible content is not expected to exceed $1.4E+05$ Btu/ft².

The borders of this fire area are constructed using construction techniques and material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating.

significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical systems of safe-shutdown function.

- D-Class 1E Battery
- D-Class 1E Power system

Since this fire area is separated from the Train A, B, and C areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

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9A.3.124 FA3-122 C-Class 1E Battery Charger Room

Figure 9A-11 shows the location of this fire area on the west side of the west PS/B. This fire area consists of a single fire zone designated as FA3-122-01. This room contains the train C DC control center, inverter and transformer (battery charger) electrical panel, instruments and controls, with low voltage and control electrical cables associated with battery charging. The fire loading due to this combustible content is not expected to exceed $6.0E+04$ Btu/ft².

The borders of this fire area are constructed using construction techniques and material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train C.

Fire Detection and Suppression Features

FA3-122-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

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9A.3.125 FA3-123 D-Class 1E Battery Charger Room

Figure 9A-11 shows the location of this fire area on the west side of the west PS/B. This fire area consists of a single fire zone designated as FA3-123-01. This room contains the train D dc control center, inverter and transformer (battery charger) electrical panel, instruments and controls, with low voltage and control electrical cables associated with battery charging. The fire loading due to this combustible content is not expected to exceed $5.7E+04$ Btu/ft².

The borders of this fire area are constructed using construction techniques and material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train D.

Fire Detection and Suppression Features

FA3-123-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries. Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Fire Protection Adequacy Evaluation

The fire area boundaries are constructed with concrete walls in excess of 8 inches thick and 3-hour rated fire doors and protected penetrations and openings are provided for fire confinement. HVAC ductwork passing into this area is equipped with fire dampers in accordance with the guidance of NFPA 90A.

The combustible loading in this area is light and a fire of sufficient size and intensity to compromise the fire barrier boundaries is not deemed credible.

The fire protection system for this room is designed in accordance with NFPA 72 and 14, and is the combination of smoke detectors and manual hose stations. Based on the expected fire hazards within the compartment during normal operation and the maximum expected fire during equipment maintenance, the 3-hour fire rated boundaries of the compartment are more than sufficient to contain any unsuppressed fire that can be expected to occur within the compartment. On this basis, there is adequate fire protection provided for this compartment (fire area).

Fire Protection System Integrity

The fire protection capability for this area is provided from manual hose streams applied by the plant fire brigade. The standpipe is designed to code (NFPA 14) and unlikely to release water except after extreme seismic events. Since this is a safety-related area, all fire protection system piping is seismically supported to prevent its falling on safety-related equipment during an event and causing damage. Unintended operation of the fire suppression activity is not expected since deliberate manual activation is required. In the event of fire, electrical cables and equipment in the area would be protected from significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical systems of safe-shutdown function.

- C,D-Class 1E Power system

Since this area is separated from A and B Class 1E Power System by 3-hour fire barriers, two train equipment in other areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of achieving safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

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9A.3.126 FA3-124 Spare Battery Charger-2 Room

Figure 9A-11 shows the location of this fire area on the middle of the west PS/B. This fire area consists of a single fire zone designated as FA3-124-01. This room contains the train N DC control center, inverter and transformer (battery charger) electrical panel, instruments and controls, with low voltage and control electrical cables associated with battery charging. The fire loading due to this combustible content is not expected to exceed $6.6E+04$ Btu/ft².

cables and equipment in the area would be protected from significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical system of safe-shutdown function.

- D-Class 1E Power system

Since this fire area is separated from the Train A, B and C areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

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9A.3.127 FA3-125 A-AAC Selector Circuit Panel Room

Figures 9A-11 shows the location of this fire area on the west side of the east PS/B adjacent to the south portion of the R/B. This fire area consists of the single fire zone, FA3-125-01, A-AAC switching Circuit Panel Room. This room has combustible fire loading that is not expected to exceed $4.7E+04$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train B.

Fire Detection and Suppression Features

FA3-125-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries.

Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Fire Protection Adequacy Evaluation

The fire area boundaries are constructed with concrete walls in excess of 8 inches thick and 3-hour rated fire doors and protected penetrations and openings are provided for fire confinement. HVAC ductwork passing into this area is equipped with fire dampers in accordance with the guidance of NFPA 90A.

The combustible loading in this area is light and a fire of sufficient size and intensity to compromise the fire barrier boundaries is not deemed credible.

The fire protection system for this room is designed in accordance with NFPA 72 and 14, and is the combination of smoke detectors and manual hose stations. Based on the expected fire hazards within the compartment during normal operation and the maximum expected fire during equipment maintenance, the 3-hour fire rated boundaries of the compartment are more than sufficient to contain any unsuppressed fire that can be expected to occur within the compartment. On this basis, there is adequate fire protection provided for this compartment (fire area).

Fire Protection System Integrity

The fire protection capability for this area is provided from manual hose streams applied by the plant fire brigade. The standpipe is designed to code (NFPA 14) and unlikely to release water except after extreme seismic events. Since this is a safety-related area, all fire protection system piping is seismically supported to prevent its falling on safety-related equipment during an event and causing damage. Unintended operation of the fire suppression activity is not expected since deliberate manual activation is required. In the event of a fire, electrical cables and equipment in the area would be protected from significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical system of safe-shutdown function.

- B-Class 1E Power system

Since this fire area is separated from the Train A, C, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping~~

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~~systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

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9A.3.128 FA3-126 B-AAC Selector Circuit Panel Room

Figures 9A-11 shows the location of this fire area on the west side of the east PS/B adjacent to the south portion of the R/B. This fire area consists of the single fire zone, FA3-126-01, B-AAC switching Circuit Panel Room. This room has combustible fire loading that is not expected to exceed $4.7E+04$ Btu/ft².

The borders of this fire area are constructed using reinforced concrete and other material which results in fire resistance that provides at least a 3-hour ASTM E-119 fire rating. Openings and penetrations into this fire area are protected with fire protection features provide at least 3-hour fire resistance.

The area is identified as being associated with safety train C.

Fire Detection and Suppression Features

FA3-126-01 is provided with automatic smoke detection, and manual fire alarm pull station is installed as secondary detection. Primary fire suppression is provided from manual fire hose stations. Secondary suppression is provided from portable fire extinguishers.

Smoke Control Features

Any HVAC ductwork passing into the area is provided with automatic closing fire dampers at fire area boundaries as required by NFPA 90A. Smoke migration into the area is mitigated by appropriately sealed penetrations and openings of the fire area boundaries. Smoke removal as required due to fire within the area can be accomplished by the plant fire brigade utilizing portable fans and flexible ducting.

Fire Protection Adequacy Evaluation

The fire area boundaries are constructed with concrete walls in excess of 8 inches thick and 3-hour rated fire doors and protected penetrations and openings are provided for fire confinement. HVAC ductwork passing into this area is equipped with fire dampers in accordance with the guidance of NFPA 90A.

The combustible loading in this area is light and a fire of sufficient size and intensity to compromise the fire barrier boundaries is not deemed credible.

The fire protection system for this room is designed in accordance with NFPA 72 and 14, and is the combination of smoke detectors and manual hose stations. Based on the expected fire hazards within the compartment during normal operation and the maximum expected fire during equipment maintenance, the 3-hour fire rated boundaries of the compartment are more than sufficient to contain any unsuppressed fire that can be expected to occur within the compartment. On this basis, there is adequate fire protection provided for this compartment (fire area).

Fire Protection System Integrity

The fire protection capability for this area is provided from manual hose streams applied by the plant fire brigade. The standpipe is designed to code (NFPA 14) and unlikely to release water except after extreme seismic events. Since this is a safety-related area, all fire protection system piping is seismically supported to prevent its falling on safety-related equipment during an event and causing damage. Unintended operation of the fire suppression activity is not expected since deliberate manual activation is required. In the event of a fire, electrical cables and equipment in the area would be protected from significant water intrusion since they are installed above the floor elevation above expected flooding levels.

Safe Shutdown Evaluation

A fire in this area has the potential to damage the following typical system of safe-shutdown function.

- C-Class 1E Power system

Since this fire area is separated from the Train A, B, and D areas by 3-hour fire rated barriers, two safety trains of equipment in other fire areas can achieve and maintain safe-shutdown from full power, and the fire in this fire area, therefore, will not adversely impact the ability of safe-shutdown.

Radioactive Release to Environment Evaluation

This area is located in the PS/B which is not a radiological area. ~~Radiological material is not allowed within this building area by administrative controls. There are no piping systems in the area that could contain fluids with radiological content.~~ As such, a fire in this area is not deemed credible of causing a radioactive release to the environment.

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9A.3.129 FA4-101 Auxiliary Building

The A/B is classified as one fire area consisting of twenty three fire zones which do not contain any safety train cables, equipment, or functions associated with safe-shutdown. The A/B layout and associated fire zones is shown in Figures 9A-13 through 9A-17. The following listing provides the individual designation, number of the fire zone, and maximum expected fire load for each A/B fire zone.

Fire Zone No.	Designation	Fire Load (Btu/ft ²)
FA4-101-01	Auxiliary Building B1F Floor	3.1E+04
FA4-101-02	FA4-101-02 Stairwell (B1F ~ 3F)	6.2E+02
FA4-101-03	Boric Acid Tank Room	7.7E+02
FA4-101-04	Auxiliary Building 1F Floor	3.2E+04
FA4-101-06	Non-Class 1E Electrical Room (FA4-101-06)	3.3E+05
FA4-101-07	Computer Room	8.2E+03