MITSUBISHI HEAVY INDUSTRIES, LTD.
16-5, KONAN 2-CHOME, MINATO-KU
TOKYO, JAPAN

August 3, 2011

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Mr. Jeffrey A. Ciocco

Docket No. 52-021
MHI Ref: UAP-HF-11253

Subject: **Transmittal of the Updated Tier 2, Chapters 9 and 12 of US-APWR DCD**

Reference:
1) "Request for Additional Information No. 4206 (CP RAI#135), SRP Section: 12.03-12.04 – Radiation Protection Design Features" dated January 29, 2010.
2) Letter Luminant Log # TXNB-10065 from R. Flores (Luminant Generation Company LLC) to U.S. NRC, "Comanche Peak Nuclear Power Plant, Units 3 and 4, Docket Numbers 52-034 and 52-035 Supplemental Information for Response to Request for Additional Information No.4206" dated on September 22, 2010.
3) Letter Luminant Log # TXNB-11020 from R. Flores (Luminant Generation Company LLC) to U.S. NRC, "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)" dated on April 13, 2010.
4) Letter Luminant Log # TXNB-11050 from R. Flores (Luminant Generation Company LLC) to U.S. NRC, "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)" dated on July 28, 2011.
5) Letter MHI Ref: UAP-HF-11078 from Y. Ogata (MHI) to U.S. NRC, "Submittal of US-APWR Design Control Document Revision 3 in Support of Mitsubishi Heavy Industries, Ltd.'s Application for Design Certification of the US-APWR Standard Plant Design" dated on March 31, 2011.

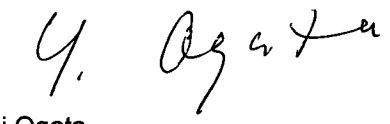
Mitsubishi Heavy Industries, Ltd. ("MHI") and Luminant have been working to resolve a Request for Additional Information ("RAI") to Combined License ("COL") Application for Comanche Peak Units 3 and 4. COL RAI #135, question 12.03-12.04-11 (Reference 1) was issued to request providing how COL applicant provided SSCs prevent or mitigate contamination of the environment. Luminant sent NRC the response to CP RAI #135 (Reference 2 and 3), but NRC had additional comment, and supplemental response was prepared (Reference 4). In this activity, MHI concluded that the description in DCD Tier 2 Chapters 9,and 12 would be revised.

With this letter, MHI transmits to the U.S. Nuclear Regulatory Commission ("NRC") Staff the proposed marked-up to be made to the DCD revision 3 (Reference 5). This update will be incorporated into future DCD revision. Same proposed marked-up were shown in Reference 4 as information.

D081
NRO

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if NRC has questions concerning any aspect of this letter. His contact information is provided below.

Sincerely,



Yoshiki Ogata,
General Manager- APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

Enclosure:

1. Update of Tier 2, Chapter 9 of US-APWR DCD
2. Update of Tier 2, Chapter 12 of US-APWR DCD

CC: J. A. Ciocco
C. K. Paulson

Contact Information
C. Keith Paulson, Senior Technical Manager
Mitsubishi Nuclear Energy Systems, Inc.
300 Oxford Drive, Suite 301
Monroeville, PA 15146
E-mail: ckpaulson@mnes-us.com
Telephone: (412) 373-6466

Enclosure 1

UAP-HF-11253
Docket No. 52-021

Update of Tier 2, Chapter 9 of US-APWR DCD

August, 2011

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.

RCOL2_12.03-12.04-11 S03

RCOL2_12.03-12.04-11 S02

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.

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.

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/ft^2.

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/ft^2. 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 Pipng 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/ft^2. FA3-104-02 has combustible fire loading not expected to exceed 9.3E+02 Btu/ft^2. 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/ft^2.

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 1.2E+04 Btu/ft^2. 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 3.0E+05 Btu/ft^2. FA3-105-03 has the combustible loading not expected to exceed 1.9E+03 Btu/ft^2.

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/ft^2.

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. RCOL2_12.03-12.04-11 S03

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/ft^2.

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.

RCOL2_12.03-12.04-11 S03

- 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/ft^2.

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 Pipng 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/ft^2. FA3-111-02 has combustible fire loading not expected to exceed 1.9E+03 Btu/ft^2. 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/ft^2.

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/ft^2.

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 buildeing. 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 Pipng Area. The FA3-113-01 zone has the combustible fire loading that is not expected to exceed 1.2E+04 Btu/ft^2. 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/ft^2. FA3-113-03 has combustible loading not expected exceed 1.9E+03 Btu/ft^2.

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/ft^2.

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/ft^2.

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/ft^2.

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/ft^2.

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/ft^2.

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/ft^2.

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/ft^2.

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/ft^2.

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.

RCOL2_12.03-12.04-11 S03

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/ft^2.

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. RCOL2_12.03-12.04-11 S03

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/ft^2.

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.

RCOL2_12.03-12.04-11 S03

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/ft^2.

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. RCOL2_12.03-12.04-11 S03

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/ft^2.

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

RCOL2_12.03-12.04-11 S03

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.3.128 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/ft^2.

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. RCOL2_12.03-12.04-11 S03

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 indivisual 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

Docket No.52-021
MHI Ref: UAP-HF-11253

Enclosure 2

UAP-HF-11253
Docket No. 52-021

Update of Tier 2, Chapter 12 of US-APWR DCD

August, 2011

Table 12.3-8 Regulatory Guide 4.21 Design Objectives and Applicable DCD Subsection Information for Minimizing Contamination and Generation of Radioactive Waste (Sheet 16 of 62)

Water Systems **(Note: The "System Features" column consists of excerpts/summary from the DCD)**

Condensate Storage Facility

Objective		System Features	DCD Reference
1	Minimize leaks and spills and provide containment in areas where such events may occur.	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.	9.2.6.2.4
		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.	9.2.6.2.4

RCOL2_12.0 3-12.04-11 S03

RCOL2_12.03-12. 04-11 S02