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Dominion®

January 7, 2013

~~**SECURITY-RELATED INFORMATION – WITHHOLD UNDER 10 CFR 2.390**~~

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Serial No. NA3-12-012R
Docket No. 52-017
COL/DBE

DOMINION VIRGINIA POWER
NORTH ANNA UNIT 3 COMBINED LICENSE APPLICATION
SRP 09.04.05: RESPONSE TO RAI LETTER 100

On May 7, 2012, the NRC requested additional information to support the review of certain portions of the North Anna Unit 3 Combined License Application (COLA), which consisted of one question. As a result of conversations with the NRC project manager during weekly status calls, additional time beyond the originally allotted response time was granted. The response to the following RAI Question is provided in Enclosure 1:

- RAI 6262, Question 09.04.05-8 UHS Internal Flood Protection

This information will be incorporated into a future submission of the North Anna Unit 3 COLA, as described in the enclosures.

Dominion requests Enclosure 2, which contains Security-Related Information, be withheld from public disclosure in accordance with 10 CFR 2.390(d)(1).

RAI 6262 question 09.04.05-8 was issued as a follow-up to RAI 5658 question 09.04.05-4. To maintain consistency with the information presented in the response to question 09.04.05-8, the response to 09.04.05-4 will be revised and submitted separately by February 28, 2013.

Please contact Regina Borsh at (804) 273-2247 (regina.borsh@dom.com) if you have questions.

Very truly yours,

Eugene S. Grecheck

~~**ENCLOSURE 2 OF THIS LETTER CONTAINS SECURITY-RELATED INFORMATION AND MUST BE PROTECTED ACCORDINGLY. UPON SEPARATION OF ENCLOSURE 2, THIS LETTER IS DECONTROLLED.**~~

D089
NRO

Enclosures:

1. Response to NRC RAI Letter No. 100, RAI 6262, Question 09.04.05-8.
2. Proposed North Anna Unit 3 S-COLA Changes from the Response to NRC RAI Letter No. 100, RAI 6262, Question 09.04.05-8. (Security-Related Information)

Commitments made by this letter:

1. This information will be incorporated into a future submission of the North Anna Unit 3 COLA, as described in the enclosures.
2. The response to RAI 5658 question 09.04.05-4 will be revised and submitted by February 28, 2013.

COMMONWEALTH OF VIRGINIA

COUNTY OF HENRICO

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Eugene S. Grecheck, who is Vice President-Nuclear Development of Virginia Electric and Power Company (Dominion Virginia Power). He has affirmed before me that he is duly authorized to execute and file the foregoing document on behalf of the Company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 7th day of January, 2013
My registration number is 112536 and my
Commission expires: April 30, 2015

Jane D. Marcek
Notary Public

cc: U. S. Nuclear Regulatory Commission, Region II
C. P. Patel, NRC
T. S. Dozier, NRC
G. J. Kolcum, NRC

ENCLOSURE 1

Response to NRC RAI Letter No. 100

RAI No. 6262, Question 09.04.05-8

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

North Anna Unit 3

Dominion

Docket No. 52-017

RAI NO.: **6262 (RAI LETTER NO. 100)**

SRP SECTION: 09.04.05 – ENGINEERED SAFETY FEATURE VENTILATION SYSTEM

QUESTIONS for Advanced Reactor Branch 1 (ARB1)

DATE OF RAI ISSUE: 05/07/2012

QUESTION NO.: 09.04.05-8

This is a follow-up RAI to RAI 5658, Question 09.04.05-4. In the response dated August 22, 2011, the applicant responded that:

> "*North Anna Unit 3 has been evaluated for internal flood protection for site-specific structures. The evaluation concluded that Postulated internal flooding due to events including Moderate Energy Line Break (MELB) and fire suppression activities cannot adversely affect safe plant operations or the ability of the plant to achieve and maintain a safe shutdown condition, if necessary, in accordance with the single failure criterion.*"

Please provide the basis for the above conclusion including the significant assumptions made in the evaluation for use of non-safety grade floor drains, and the credit taken for use of door seals between the pump rooms of different divisions. In particular, the staff would like to know the following:

1. To what levels will the internal flood waters rise within the pump rooms in the absence of a safety related floor drainage system in the pump rooms,
2. Will the floor drainage system piping between the ESW pump room and the transfer pump room be physically connected such that a plugged drainage system could cause failure of independent Class 1E powered equipment in two different Class 1E divisions?
3. In the absence of a safety related floor drainage system (i.e. no credit given) to what level will water rise in both the room that contains the internal flood

leak and the adjacent room given the non-existence of a water tight door between the pump rooms?

The staff would like to review the evaluation in more details in the future at a mutually acceptable location.

Dominion Response

In responding to these questions, some changes in the design of the ESW pump and UHS transfer pump rooms were identified that improve protection against internal flooding.

As a result, the ESW UHS pump house design was changed to remove the 3-hour fire rated access door between the ESW pump and UHS transfer pump rooms. The revised design features separate exterior entrance doors for the ESW and UHS transfer pump rooms on the north side of each of the four pump houses. The ESW pump rooms also have an exterior door on the south side of each pump house. All of the exterior doors will be similarly designed, with interior missile barriers to protect the entrance to the pump rooms. The removal of the access door between the two pump rooms results in a solid 3-hour fire rated wall with no unsealed penetrations. Penetrations in this fire barrier wall will be sealed with a 3-hour fire rated seal and a water tight seal.

The floor drain system is classified as Equipment Class (EC) 10, which is non-safety related. The system is a simple passive design consisting of multiple floor drain openings in each room. Each floor drain has a single piece of straight pipe through which water flows down into the pump bay located directly under the floor. The pipe extends below the minimum water level of the pump bay. There is no common drain line to be clogged, and the probability that multiple floor drains will be clogged simultaneously is low. This piping arrangement also precludes fire transferring between the two pump rooms through the common pump bay. However, should the floor drains become plugged, water could flow under the exterior doors, which are not water tight. Water exiting the north door of the pump rooms can freely flow through the grated platform outside of the entrance and into the basin below. Water exiting the southwest door of the ESW pump room will flow down to grade. At any exterior door, water cannot accumulate and cannot flow back into an adjacent pump room.

Non-safety liquid detection devices will be installed in the ESW UHS pump houses that alarm in the Main Control Room and Remote Shutdown Console Room. These alarms ensure asset protection and serve as a further precaution to minimize the amount of water discharging from an MELB in either pump room.

The following paragraphs summarize the above discussion of the internal flood protection features of the ESW UHS pump houses, specifically as it relates to the three parts of this RAI question:

1. The potential for flooding either the ESW or UHS pump rooms is mitigated by the flood protection features described above (i.e., floor drains, exterior door leakage, and liquid detection devices and alarms). In the unlikely event that flooding does occur in an ESW or UHS pump room, the design and flood protection features of the ESW UHS pump house will prevent the flood water from entering the adjacent pump room and the potential loss of the associated electrical train in the adjacent pump room.

   As discussed in FSAR Sections 9.2.1.1.1 and 9.2.5.3, the ESW and UHS are designed to mitigate the consequences of a design basis event, assuming a single active failure and one train being unavailable due to maintenance. Therefore, the loss of a single ESW or UHS transfer pump would not prevent the fulfillment of the UHS safety function and thus, it is not necessary to evaluate the potential room water level for equipment protection or common cause failure.

2. The flooding in either the ESW or UHS pump room cannot enter the adjacent pump room through the drain piping because each floor drain is independent. There are no common piping headers in the floor drain system. This design precludes the potential for flooding to occur between pump rooms through the drain system piping. Therefore, separate Class 1E power supplies and their associated equipment are protected from flooding between the two rooms through the floor drains.

3. The design change described above removed the door between the ESW and UHS pump rooms, which resulted in the rooms being separated by a solid wall with all penetrations sealed with the appropriate fire rated and water tight seals. This design prevents the flood water from either the ESW or UHS pump rooms from entering the adjacent pump room and the potential loss of the pump and associated electrical train in the adjacent pump room.

   As stated in the response to Part 1, the ESW and UHS are designed to mitigate the consequences of a design basis event, assuming a single active failure and one train being unavailable due to maintenance. Therefore, the loss of a single ESW or UHS transfer pump would not prevent the fulfillment of the UHS safety function and thus, it is not necessary to evaluate the potential room water level for equipment protection or common cause failure.

Proposed COLA Revision

FSAR Figures 1.2-204, 1.2-205, 1.2-206, 1.2-208, 1.2-209, 1.2-210, Table 3.2-201, Figures 3.8-206, 3.8-208, 3.8-209, 3.8-211, Sections 9.2.5.5, 9.4.5.3.6, Appendix 9A.3, Table 9A-202, and Figure 9A-201 will be revised as indicated in the attached mark-up.

Markup of North Anna COLA

The attached markup represents Dominion's good faith effort to show how the COLA will be revised in a future COLA submittal in response to the subject RAI. However, the same COLA content may be impacted by revisions to the DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be somewhat different than as presented herein.

NAPS COL 3.2(4)
NAPS COL 3.2(5)
NAPS COL 3.2(6)

Table 3.2-201 Classification of Site-Specific Mechanical and Fluid Systems, Components, and Equipment

Systems and Components	Equipment Class	Location	Quality Group	10 CFR 50 Appendix B (Reference 3.2-8)	Code and Standards	Seismic Category	Notes
4. Startup steam generator (SG) blowdown system							
System components, piping and valves	6	turbine building (T/B), A/B, outdoors	N/A	N/A	6	Note 1	
5. UHS ESW pump house floor drain system							
Floor drain and piping	10	UHSRS	N/A	N/A	N/A	N/A	Non-Seismic
Liquid detection device	10	UHSRS	N/A	N/A	N/A	N/A	Non-Seismic

Notes:

1. Seismic category meeting RG 1.143 (Reference 3.2-10) is applied.
2. Not used.
3. Identification number for "Code and Standards"
   (1) American Society of Mechanical Engineers (ASME) Code, Section III, Class 1 (Reference 3.2-14)
   (2) ASME Code, Section III, Class 2 (Reference 3.2-14)
   (3) ASME Code, Section III, Class 3 (Reference 3.2-14)
   (4) RG 1.26 (Reference 3.2-13), Table 1, Quality Standards
   (5) Codes and standards as defined in design bases
   (6) Codes and standards, and guidelines provided in RG 1.143 (Reference 3.2-10), for design of SSCs for Radwaste Facility
4. Not used

NAPS ESP COL 2.4-7 An inspection program specifies the monitoring of ice formation during long term plant shutdown in winter months to assure the required water volume is available in the basins prior to plant start-up.

9.2.5.5 Instrumentation Requirements

NAPS COL 9.2(24) Replace the first paragraph in DCD Subsection 9.2.5.5 with the following.

Water level in each of the basins is controlled by level instrumentation that opens or closes the automatic valves in the makeup lines.

Two level transmitters and associated signal processors are provided for each basin to indicate water level in the basin and annunciate in the MCR for both the high and low water levels in the basin.

A water level signal at six inches below the normal water level causes the makeup water CV to open. A signal at normal water level then causes the makeup CV to close. A low level alarm annunciates in the MCR whenever the water level falls four feet below the normal water level.

During accident conditions, level indications from the operating basins are used to alert the MCR operator to start the UHS transfer pump to transfer water from the idle basin to the operating basins.

Blowdown rate is controlled manually. The blowdown CVs close automatically upon receipt of a low water level signal or ECCS actuation signal. The valve is designed to fail in the close position. Failure of the valve to close is indicated in the MCR.

The conductivity cells are provided at the ESW pump discharge line and conductivity is indicated in the MCR.

Temperature elements are provided in each basin and temperatures are indicated in the MCR.

Local flow rate and pressure indicators located in each UHS transfer pump discharge header are used for pump performance testing.

The cooling tower fan is equipped with vibration sensors that alarm in the control room in the event of high vibration.

Non-safety liquid detection devices are provided in the ESW and transfer pump rooms that alarm in the Main Control Room and Remote Shutdown Console Room. These alarms ensure asset protection and serve as a further precaution to minimize the amount of water discharging from a MELB in either pump room.

system and smoke detection system are Seismic Category II. Their failure during a design basis seismic event will not damage any of the safety-related equipment in the areas. The standpipe systems supplying hose stations are Seismic Category I and will remain functional under safe shutdown earthquake loadings for manual fire suppression in areas containing equipment required for safe-shutdown.

NAPS COL 9.4(6)

Add the following new subsection after DCD Subsection 9.4.5.3.5

9.4.5.3.6 UHS ESW Pump House Ventilation System

The ESW pump room ventilation system and the transfer pump room ventilation system located in each UHS ESW pump house are each powered by a different Class 1E bus.

The transfer pump and the ESW pump in each UHS ESW pump house are powered from different Class 1E power supplies and are located in different fire areas separated by three-hour fire barriers. The two Class 1E power supply trains in a UHS ESW pump house are physically separated by a three-hour fire barrier.

The safety function of the UHS ESW pump house ventilation system is assured by the physical separation provided by the four separate and independent UHS ESW pump houses. All ventilation system components are classified as equipment Class 3, Seismic Category I.

The ESW pump room ventilation system and the transfer pump room ventilation system are capable of performing their safety function under all associated design basis accidents coincident with a LOOP.

The ESW pump room exhaust fans and transfer pump room exhaust fans are capable of performing required safety functions under all postulated internal flooding events as described in Section 3.4.1.3. ~~While not a flood barrier, the 3-hour fire rated doors and walls that separate the UHS ESW pump and transfer pump rooms will reduce the flow of water between the rooms in the event of internal flooding, allowing the floor drain in the unaffected room to maintain the water below the flood level.~~ The wall separating the ESW pump room from the transfer pump room is a solid wall with all penetrations sealed with an approved 3-hour fire rated seal and a water tight seal.

As shown in Table 9.4-203, failure of a single active component in one of the UHS ESW pump house ventilation system does not result in a loss of the system's safety function.

Appendix 9A Fire Hazard Analysis

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

9A.3 Fire Hazard Analysis Results

STD COL 9.5(2)

Add the following information after second paragraph in DCD Subsection 9A.3.

The FHA is also conducted for the following site-specific plant structures and associated fire area and/or fire zones which are depicted in Figures 9A-201 and 9A-202.

- Essential Service Water (ESW) ~~Pumping Station~~ Pump House
- Ultimate Heat Sink (UHS)
- Transformer Yard
- Plant Support Buildings

Plant buildings are located such that unacceptable exposure to environmental impact such as wildfires does not occur. Structures are located such that non-safety related structures do not pose unacceptable exposure to safety-related structures. For a fire zone by fire zone review, Table 9A-202 identifies the type and quantity of combustible materials in each fire zone of the site-specific plant structures and provides a summary of the FHA for the associated fire zone. The discussion below reviews the fire hazards for each fire area on an area by area basis. Table 9A-203 shows the fire zone to fire zone interface which also depicts fire area to fire area boundaries that must be protected for 3-hour fire rated boundaries.

NAPS COL 9.5(2)

Add the following new subsections after DCD Subsection 9A.3.141.

9A.3.142 FA7-201 A-ESW Pump Room

The A-ESW pump room is shown on Figure 9A-201. The room contains the train A ESW pump, circuits, and controls. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. ~~The door and all openings or penetrations into this room~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. All openings and penetrations in the

3-hour fire rated barriers are protected with 3-hour fire resistive seals or components. The wall between the pump rooms is water tight. The combustible material associated with the ESW pump installation is lube oil and electrical cables.

The ceiling and all exterior walls are not required to be fire rated because there are no redundant or dedicated shutdown systems within the yard area adjacent to the ESW pump house. There are also no significant amounts of combustible loading in the yard area adjacent to the ESW pump house. There is approximately 100 feet between redundant pump houses with no intervening combustible material or ignition sources.

Each floor drain consists of a single straight pipe that extends down below the minimum water level for the basin. This arrangement will preclude the transfer of fire between the pump rooms through the pump bay area.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression and hose station in accordance with RG 1.189 Positions 3.1.1.k, 3.2.1.j and 6.1.9. This will assure that any fire damage occurring within this room is minimized and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2)

Smoke Control Features

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train A ESW system. The electrical circuits from other safety trains in this area will be protected by a one-hour fire rated wrap. As such, a fire in this area could only adversely impact the safety train A safe-shutdown functions. The fire would be confined to this area, by fire rated barriers and/or by physical separation. Therefore, equipment within safety trains B, C, and D would remain free of fire damage and able to obtain and maintain safe-shutdown.

Radioactive Release to Environment Evaluation

The ESW pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

NAPS COL 9.5(2)

9A.3.143 FA7-202 A-UHS Transfer Pump Room

The A-UHS transfer pump room is shown on Figure 9A-201. The room contains an UHS transfer pump capable of transferring water from the A-cooling tower basin. Its circuits and controls are powered by either the C or D Class 1E bus. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119.

~~The door and all openings or penetrations into this room~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals or components. The wall between the pump rooms is water tight. The combustible material associated with the UHS transfer pump installation is lube oil and electrical cables.

The ceiling and all exterior walls are not required to be fire rated because there are no redundant or dedicated shutdown systems within the yard area adjacent to the ESW pump house. There are also no significant amounts of combustible loading in the yard area adjacent to the ESW pump house. There is approximately 100 feet between redundant pump houses with no intervening combustible material or ignition sources.

Each floor drain consists of a single straight pipe that extends down below the minimum water level for the basin. This arrangement will

preclude the transfer of fire between the pump rooms through the pump bay area.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression and hose station in adjacent ESW pump room in accordance with RG 1.189 Positions 3.1.1.k, 3.2.1.j and 6.1.9. This will assure that any fire damage occurring within this room is minimized in damage and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2)

Smoke Control Features

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

NAPS COL 9.5(2)

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train C or D depending on the manual breaker alignment. The transfer pump circuits are protected from a fire in the adjacent ESW pump room to assure the transfer pump can perform its safe-shutdown function for a fire in the train A ESW pump room. As such, a fire in this area could only adversely impact the transfer pump functions from the A-cooling tower basin. The fire would be confined to this area by the 3-hour fire rated walls. Therefore, equipment within safety trains A, B, and C or D would remain free of fire damage and able to obtain and maintain safe-shutdown.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train A ESW system and the associated ESW cooling for the train A CCW safe-shutdown cooling functions. As such, a fire in this are could adversely impact safety train A safe-shutdown functions. Since the fire would be confined to this area, equipment within safety trains B, C, and D would remain free of fire damage and able to obtain safe-shutdown.

Radioactive Release to Environment Evaluation

The A-UHS is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the cooling tower structure is not deemed capable of producing a radioactive release.

NAPS COL 9.5(2)

9A.3.145 FA7-204 B-ESW Pump Room

The B-ESW pump room is shown on Figure 9A-201. The room contains the train B ESW pump, circuits, and controls. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. ~~The door and all openings or penetrations into this room~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals or components. The wall between the pump rooms is water tight. The combustible material associated with the ESW pump installation is lube oil and electrical cables.

The ceiling and all exterior walls are not required to be fire rated because there are no redundant or dedicated shutdown systems within the yard area adjacent to the ESW pump house. There are also no significant amounts of combustible loading in the yard area adjacent to the ESW pump house. There is approximately 100 feet between redundant pump houses with no intervening combustible material or ignition sources.

Each floor drain consists of a single straight pipe that extends down below the minimum water level for the basin. This arrangement will preclude the transfer of fire between the pump rooms through the pump bay area.

NAPS COL 9.5(2)

9A.3.146 FA7-205 B-UHS Transfer Pump Room

The B-UHS transfer pump room is shown on Figure 9A-201. The room contains an UHS transfer pump capable of transferring water from the B-cooling tower basin. Its circuits and controls are powered by either the C or D Class 1E bus. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. ~~The door and all openings or penetrations into this room~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals or components. The wall between the pump rooms is water tight. The combustible material associated with the UHS transfer pump installation is lube oil and electrical cables.

The ceiling and all exterior walls are not required to be fire rated because there are no redundant or dedicated shutdown systems within the yard area adjacent to the ESW pump house. There are also no significant amounts of combustible loading in the yard area adjacent to the ESW pump house. There is approximately 100 feet between redundant pump houses with no intervening combustible material or ignition sources.

Each floor drain consists of a single straight pipe that extends down below the minimum water level for the basin. This arrangement will preclude the transfer of fire between the pump rooms through the pump bay area.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression and hose station in adjacent ESW pump room in accordance with RG 1.189 Positions 3.1.1.k, 3.2.1.j and 6.1.9. This will assure that any fire damage occurring within this room is minimized and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2)

Smoke Control Features

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

area. As such, any fire that could occur within the cooling tower structure is not deemed capable of producing a radioactive release.

NAPS COL 9.5(2)

9A.3.148 FA7-207 C-ESW Pump Room

The C-ESW pump room is shown on Figure 9A-201. The room contains the train C ESW pump, circuits, and controls. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. ~~The door and all openings or penetrations into this room.~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals or components. The wall between the pump rooms is water tight. The combustible material associated with the ESW pump installation is lube oil and electrical cables.

The ceiling and all exterior walls are not required to be fire rated because there are no redundant or dedicated shutdown systems within the yard area adjacent to the ESW pump house. There are also no significant amounts of combustible loading in the yard area adjacent to the ESW pump house. There is approximately 100 feet between redundant pump houses with no intervening combustible material or ignition sources.

Each floor drain consists of a single straight pipe that extends down below the minimum water level for the basin. This arrangement will preclude the transfer of fire between the pump rooms through the pump bay area.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression and hose station in accordance with RG 1.189 Positions 3.1.1.k, 3.2.1.j and 6.1.9. This will assure that any fire damage occurring within this room is minimized and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2)

Smoke Control Features

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train C-ESW system. The electrical circuits from other safety trains in this area will be protected by a one-hour fire rated wrap. As such, a fire in this area could only adversely impact the safety train C safe-shutdown functions. The fire would be confined to this area, by fire rated barriers and/or by physical separation. Therefore, equipment within safety trains A, B, and D would remain free of fire damage and able to obtain and maintain safe-shutdown.

Radioactive Release to Environment Evaluation

The ESW pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

NAPS COL 9.5(2)

9A.3.149 FA7-208 C-UHS Transfer Pump Room

The C-UHS transfer pump room is shown on Figure 9A-201. The room contains an UHS transfer pump capable of transferring water from the C-cooling tower basin. Its circuits and controls are powered by either the A or B Class 1E bus. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. ~~The door and all openings or penetrations into this room~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals or

components. The wall between the pump rooms is water tight. The combustible material associated with the UHS transfer pump installation is lube oil and electrical cables.

The ceiling and all exterior walls are not required to be fire rated because there are no redundant or dedicated shutdown systems within the yard area adjacent to the ESW pump house. There are also no significant amounts of combustible loading in the yard area adjacent to the ESW pump house. There is approximately 100 feet between redundant pump houses with no intervening combustible material or ignition sources.

Each floor drain consists of a single straight pipe that extends down below the minimum water level for the basin. This arrangement will preclude the transfer of fire between the pump rooms through the pump bay area.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression and hose station in adjacent ESW pump room in accordance with RG 1.189 Positions 3.1.1.k, 3.2.1.j and 6.1.9. This will assure that any fire damage occurring within this room is minimized in damage and does not compromise adjacent fire zones and safety-related equipment.

STD COL 9.5(2)

Smoke Control Features

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

Fire Protection Adequacy Evaluation

Based on the minimal combustible material and the confinement of any fire that could occur to the location of occurrence, fire protection provided by the noncombustible construction is deemed adequate.

Fire Protection System Integrity

Fire protection of the cooling tower is inherent in its non-combustible design. Therefore, the cooling tower structure does not require automatic or manual fire suppression systems. The fire protection system integrity for this area is assured by the significant fire protection provided by the cooling tower's concrete structure, which provides fire separation.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train C ESW system and the associated ESW cooling for the train C CCW safe-shutdown cooling functions. As such, a fire in this are could adversely impact safety train C safe-shutdown functions. Since the fire would be confined to this area, equipment within safety trains A, B, and D would remain free of fire damage and able to obtain safe-shutdown.

Radioactive Release to Environment Evaluation

The C-UHS is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the cooling tower structure is not deemed capable of producing a radioactive release.

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9A.3.151 FA7-210 D-ESW Pump Room

The D-ESW pump room is shown on Figure 9A-201. The room contains the train D-ESW pump, circuits, and controls. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. ~~The door and all openings or penetrations into this room~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals or components. The wall between the pump rooms is water tight. The combustible material associated with the ESW pump installation is lube oil and electrical cables.

The ceiling and all exterior walls are not required to be fire rated because there are no redundant or dedicated shutdown systems within the yard area adjacent to the ESW pump house. There are also no significant amounts of combustible loading in the yard area adjacent to the ESW pump house. There is approximately 100 feet between redundant pump houses with no intervening combustible material or ignition sources.

Each floor drain consists of a single straight pipe that extends down below the minimum water level for the basin. This arrangement will preclude the transfer of fire between the pump rooms through the pump bay area.

Fire Detection and Suppression Features

The room is provided with automatic fire detection and automatic wet-pipe sprinkler fire suppression and hose station in accordance with RG 1.189 Positions 3.1.1.k, 3.2.1.j and 6.1.9. This will assure that any fire damage occurring within this room is minimized and does not compromise adjacent fire zones and safety-related equipment.

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Smoke Control Features

The room's HVAC exhaust will normally ventilate any smoke generated within the room. The plant fire brigade using portable fans and flexible ducting can supplement smoke removal capability.

Fire Protection Adequacy Evaluation

A fire is not expected to occur within this area due to the limited ignition sources and low combustible fire loading. Should a fire occur, it would not propagate outside the fire area boundaries.

Fire Protection System Integrity

The wet-pipe sprinkler system and standpipe is seismically supported such that the failure of the system piping during a design basis seismic event will not damage any of the safety-related equipment in the room. The fire suppression system is designed to NFPA codes and standards, using approved material. The fire suppression system is installed under a QA program that ensures system integrity.

Safe Shutdown Evaluation

The electrical circuits located within this area are associated with the safety train D-ESW system. The electrical circuits from other safety trains in this area will be protected by a one-hour fire rated wrap. As such, a fire

in this area could only adversely impact the safety train D safe-shutdown functions. The fire would be confined to this area, by fire rated barriers and/or by physical separation. Therefore, equipment within safety trains A, B and C would remain free of fire damage and able to obtain and maintain safe-shutdown.

Radioactive Release to Environment Evaluation

The ESW pump room is a non-radiological area with no piping system containing radioactive material and no other radioactive material located within the area. As such, any fire that could occur within the pump room is not deemed capable of producing a radioactive release.

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9A.3.152 **FA7-211 D-UHS Transfer Pump Room**

The D-UHS transfer pump room is shown on Figure 9A-201. The room contains an UHS transfer pump capable of transferring water from the D-cooling tower basin. Its circuits and controls are powered by either the A or B Class 1E bus. The walls of this room are of reinforced concrete construction which easily provides a fire resistive capability exceed 3-hour fire resistance as defined by ASTM E-119. ~~The door and all openings or penetrations into this room~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals or components. The wall between the pump rooms is water tight. The combustible material associated with the UHS transfer pump installation is lube oil and electrical cables.

The ceiling and all exterior walls are not required to be fire rated because there are no redundant or dedicated shutdown systems within the yard area adjacent to the ESW pump house. There are also no significant amounts of combustible loading in the yard area adjacent to the ESW pump house. There is approximately 100 feet between redundant pump houses with no intervening combustible material or ignition sources.

Each floor drain consists of a single straight pipe that extends down below the minimum water level for the basin. This arrangement will preclude the transfer of fire between the pump rooms through the pump bay area.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-201-01	Figure	9A-201	Section	9A.3.142
Building	ESW ~~Pumping Station~~ Pump House	Floors	1	Floor Area, ft^2	2059
Area Designation	A-ESW Pump Room			Associated Safety Division(s)	A
Zone Designation	A-ESW Pump Room				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 13, 14, 72, and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Lube Oil	5.15E+-5	Automatic Fire Detection System	Manual Fire Alarm Pull Station	A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.	A fire in this zone could damage the few functions of 1 safe-shutdown train. Three trains remain free from the fire damage.
Grease	1.84E+-6				
High Voltage Cable	2.46E+-6				
Low Voltage Cable	2.14E+06				
Control Cable	3.09E+06				
Instrumentation Cable	3.29E+06	Fire Suppression - Primary	Fire Suppression - Backup		
		Wet Pipe Sprinkler	Fire Hose Station		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	6.5E+03
Maximum Anticipated Combustible Loading	7.8E+03

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	FA7-202-01 FA7-203-01 FA7-206-01 FA7-101-01	— FA7-203-01	—	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. The ceiling and all exterior walls are not required to be fire rated. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals and components.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-202-01	Figure	9A-201	Section	9A.3.143
Building	ESW ~~Pumping Station~~ Pump House	Floors	1	Floor Area, ft^2	360
Area Designation	A-UHS Transfer Pump Room			Associated Safety Division(s)	C or D
Zone Designation	A-UHS Transfer Pump Room				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 13, 14, 72, 80 and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Lube Oil	5.15E+05	Automatic Fire Detection System	Manual Fire Alarm Pull Station	A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.	A fire in this fire zone could damage the few functions of 1 safe-shutdown train. Trains A, B, C, and D ESW functions remain free of fire damage.
Grease	1.84E+06				
High Voltage Cable	2.46E+06				
Low Voltage Cable	2.14E+06				
Control Cable	3.09E+06				
Instrumentation Cable	3.29E+06	Fire Suppression - Primary	Fire Suppression - Backup		
		Wet Pipe Sprinkler	Fire Hose Station		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	3.7E+04
Maximum Anticipated Combustible Loading	4.5E+04

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	FA7-201-01 FA7-203-01	- FA7-203-01	-	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. The ceiling and all exterior walls are not required to be fire rated. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals and components.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-203-01	Figure	9A-201	Section	9A.3.144
Building	UHS	Floors	1	Floor Area, ft^2	13,600
Area Designation	A-UHS			Associated Safety Division(s)	A
Zone Designation	A-UHS				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 14, and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Grease High-Voltage Cable Control Cable Instrumentation Cable	1.84E+06 2.46E+06 3.09E+06 3.29E+06	There is no automatic detection.	Manual Fire Alarm Pull Station	A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.	An unsuppressed fire would self extinguish due to lack of combustible continuity but potentially result in loss of the cooling tower function. Trains B, C, and D remain free of fire damage.
		Fire Suppression - Primary	Fire Suppression - Backup		
		Fire Hose Station	Portable Fire Extinguisher		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	7.9E+02
Maximum Anticipated Combustible Loading	9.5E+02

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	FA7-201-01 FA7-202-01 FA7-101-01	-	- FA7-201-01 FA7-202-01	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ The pump bay ceiling is 3-hour fire rated. The walls are made of reinforced concrete or other material that can provide a minimum of 3-hour fire rating. They form the boundaries of this fire area.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-204-01	Figure	9A-201	Section	9A.3.145
Building	ESW ~~Pumping Station~~ Pump House	Floors	1	Floor Area, ft^2	2059
Area Designation	B-ESW Pump Room			Associated Safety Division(s)	B
Zone Designation	B-ESW Pump Room				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 13, 14, 72 and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Luge Oil	5.15E+05	Automatic Fire Detection System	Manual Fire Alarm Pull Station	A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.	A fire in this fire zone could damage the few functions of 1 safe-shutdown train. Three trains remain free from the fire damage.
Grease	1.84E+06				
High Voltage Cable	2.46E+06				
Low Voltage Cable	2.14E+06				
Control Cable	3.09E+06				
Instrumentation Cable	3.29E+06	Fire Suppression - Primary	Fire Suppression - Backup		
		Wet Pipe Sprinkler	Fire Hose Station		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	6.5E+03
Maximum Anticipated Combustible Loading	7.8E+03

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	~~FA7-102-01~~ FA7-205-01 FA7-206-01	- FA7-206-01	-	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. The ceiling and all exterior walls are not required to be fire rated. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals and components.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-205-01	Figure	9A-201	Section	9A.3.146
Building	ESW ~~Pumping Station~~ Pump House	Floors	1	Floor Area, ft^2	360
Area Designation	B-UHS Transfer Pump Room			Associated Safety Division(s)	D or C
Zone Designation	B-UHS Transfer Pump Room				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 13, 14, 72, 80 and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Lube Oil	5.15E+05	Automatic Fire Detection System	Manual Fire Alarm Pull Station	A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.	A fire in this fire zone could damage the few functions of 1 safe-shutdown train. Trains A, B, C, and D ESW functions remain free of fire damage.
Grease	1.84E+06				
High Voltage Cable	2.46E+06				
Low Voltage Cable	2.14E+06				
Control Cable	3.09E+06				
	3.29E+06	Fire Suppression - Primary	Fire Suppression - Backup		
		Wet Pipe Sprinkler	Fire Hose Station		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	3.7E+04
Maximum Anticipated Combustible Loading	4.5E+04

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	FA7-204-01 FA7-206-01	- FA7-206-01	-	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. The ceiling and all exterior walls are not required to be fire rated. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals and components.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-206-01	Figure	9A-201	Section	9A.3.147
Building	UHS	Floors	1	Floor Area, ft^2	13,600
Area Designation	B-UHS			Associated Safety Division(s)	B
Zone Designation	B-UHS				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 14, and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Grease High Voltage Cable Control Cable Instrumentation Cable	1.84E+06 2.46E+06 3.09E+06 3.29E+06	There is no automatic detection.	Manual Fire Alarm Pull Station	A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.	An unsuppressed fire would self extinguish due to lack of combustible continuity but potentially result in loss of the cooling tower function. Trains A, C, and D remain free of fire damage.
		Fire Suppression - Primary	Fire Suppression - Backup		
		Fire Hose Station	Portable Fire Extinguisher		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	7.9E+02
Maximum Anticipated Combustible Loading	9.5E+02

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	FA7-201-01 FA7-203-01 FA7-204-01 FA7-205-01	-	- FA7-204-01 FA7-205-01	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ The pump bay ceiling is 3-hour fire rated. The walls are made of reinforced concrete or other material that can provide a minimum of 3-hour fire rating. They form the boundaries of this fire area.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-207-01	Figure	9A-201	Section	9A.3.148
Building	ESW ~~Pumping Station~~ Pump House	Floors	1	Floor Area, ft^2	2059
Area Designation	C-ESW Pump Room			Associated Safety Division(s)	C
Zone Designation	C-ESW Pump Room				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 13, 14, 72 and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Lube Oil	5.15E+05	Automatic Fire Detection System	Manual Fire Alarm Pull Station	A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.	A fire in this fire zone could damage the few functions of 1 safe-shutdown train. Three trains remain free from the fire damage.
Grease	1.84E+06				
High Voltage Cable	2.46E+06				
Low Voltage Cable	2.14E+06				
Control Cable	3.09E+06				
Instrumentation Cable	3.29E+06	Fire Suppression - Primary	Fire Suppression - Backup		
		Wet Pipe Sprinkler	Fire Hose Station		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	6.5E+03
Maximum Anticipated Combustible Loading	7.8E+03

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	~~FA7-103-01~~ FA7-208-01 FA7-209-01 FA7-212-01	- FA7-209-01	-	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. The ceiling and all exterior walls are not required to be fire rated. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals and components.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-208-01	Figure	9A-201	Section	9A.3.149
Building	ESW ~~Pumping Station~~ Pump House	Floors	1	Floor Area, ft^2	360
Area Designation	C-UHS Transfer Pump Room			Associated Safety Division(s)	A or B
Zone Designation	C-UHS Transfer Pump Room				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 13, 14, 72, 80 and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Lube Oil	5.15E+05	Automatic Fire Detection System	Manual Fire Alarm Pull Station	A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.	A fire in this fire zone could damage the few functions of 1 safe-shutdown train. Trains A, B, C, and D ESW functions remain free of fire damage.
Grease	1.84E+06				
High Voltage Cable	2.46E+06				
Low Voltage Cable	2.14E+06				
Control Cable	3.09E+06				
Instrumentation Cable	3.29E+06	Fire Suppression - Primary	Fire Suppression - Backup		
		Wet Pipe Sprinkler	Fire Hose Station		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	3.7E+04
Maximum Anticipated Combustible Loading	4.5E+04

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	FA7-207-01 FA7-209-01	- FA7-209-01	-	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. The ceiling and all exterior walls are not required to be fire rated. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals and components.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-209-01	Figure	9A-201	Section	9A.3.150
Building	UHS	Floors	1	Floor Area, ft^2	13,600
Area Designation	C-UHS			Associated Safety Division(s)	C
Zone Designation	C-UHS				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 14, and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Grease High Voltage Cable Control Cable Instrumentation Cable	1.84E+-6 2.46E+06 3.09E+06 3.25E+06	**There is no automatic detection.**	**Manual Fire Alarm Pull Station**	**A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.**	**An unsuppressed fire would self extinguish due to lack of combustible continuity but potentially result in loss of the cooling tower function. Trains A, B, and D remain free of fire damage.**
		Fire Suppression - Primary	Fire Suppression - Backup		
		Fire Hose Station	**Portable Fire Extinguisher**		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	7.9E+02
Maximum Anticipated Combustible Loading	9.5E+02

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	FA7-103-01 FA7-207-01 FA7-208-01 FA7-212-01	-	- FA7-207-01 FA7-208-01	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ The pump bay ceiling is 3-hour fire rated. The walls are made of reinforced concrete or other material that can provide a minimum of 3-hour fire rating. They form the boundaries of this fire area.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-210-01	Figure	9A-201	Section	9A.3.151
Building	ESW ~~Pumping Station~~ Pump House	Floors	1	Floor Area, ft^2	2059
Area Designation	D-ESW Pump Room			Associated Safety Division(s)	D
Zone Designation	D-ESW Pump Room				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 13, 14, 72 and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Lube Oil	5.15E+05	Automatic Fire Detection System	Manual Fire Alarm Pull Station	A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.	A fire in this fire zone could damage the few functions of 1 safe-shutdown train. Three trains remain free from the fire damage.
Grease	1.84E+06				
High Voltage Cable	2.46E+06				
Low Voltage Cable	2.14E+06				
Control Cable	3.09E+06				
Instrumentation Cable	3.29E+06	Fire Suppression - Primary	Fire Suppression - Backup		
		Wet Pipe Sprinkler	Fire Hose Station		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	6.5E+03
Maximum Anticipated Combustible Loading	7.8E+03

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	FA7-104-01 FA7-211-01 FA7-212-01	- FA7-212-01	-	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. The ceiling and all exterior walls are not required to be fire rated. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals and components.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-211-01	Figure	9A-201	Section	9A.3.152
Building	ESW ~~Pumping Station~~ Pump House	Floors	1	Floor Area, ft^2	360
Area Designation	D-UHS Transfer Pump Room			Associated Safety Division(s)	B or A
Zone Designation	D-UHS Transfer Pump Room				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 13, 14, 72, 80 and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Lube Oil	5.15E+05	Automatic Fire Detection System	Manual Fire Alarm Pull Station	A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.	A fire in this fire zone could damage the few functions of 1 safe-shutdown train. Trains A, B, C, and D ESW functions remain free of fire damage.
Grease	1.84E+06				
High Voltage Cable	2.46E+06				
Low Voltage Cable	2.14E+06				
Control Cable	3.09E+06				
Instrumentation Cable	3.29E+06	Fire Suppression - Primary	Fire Suppression - Backup		
		Wet Pipe Sprinkler	Fire Hose Station		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	3.7E+04
Maximum Anticipated Combustible Loading	4.5E+03

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	FA7-210-01 FA7-212-01	- FA7-212-01	-	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ Only the floor and the wall between the ESW pump room and the transfer pump room are required to have a 3-hour fire rating. The ceiling and all exterior walls are not required to be fire rated. All openings and penetrations in the 3-hour fire rated barriers are protected with 3-hour fire resistive seals and components.

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Table 9A-202 Fire Hazard Analysis Summary

Fire Zone	FA7-212-01	Figure	9A-201	Section	9A.3.153
Building	UHS	Floors	1	Floor Area, ft^2	13,600
Area Designation	D-UHS			Associated Safety Division(s)	D
Zone Designation	D-UHS				
Applicable Regulatory and Code Refs	IBC, RG 1.189; NFPA 10, 14, and 804				

Potential Combustibles				Fire Impact to Zone	
Item	Heat Release (Btu)	Fire Detection - Primary	Fire Detection - Backup	Suppression System Operates	Suppression System Fails to Operate
Grease High Voltage Cable Control Cable Instrumentation Cable	1.84E+06 2.46E+06 3.09E+06 3.29E+06	**There is no automatic detection.**	**Manual Fire Alarm Pull Station**	**A quickly detected and suppressed fire in this room will minimize fire damage to the safety-related equipment consistent with GDC-3.**	**An unsuppressed fire would self extinguish due to lack of combustible continuity but potentially result in loss of the cooling tower function. Trains A, B, and C remain free of fire damage.**
		Fire Suppression - Primary	Fire Suppression - Backup		
		Fire Hose Station	**Portable Fire Extinguisher**		

Fire Zone Combustible Summary	Btu/ft^2
Anticipated Combustible Loading	7.9E+02
Maximum Anticipated Combustible Loading	9.5E+02

	Wall	Floor	Ceiling	Fire Barrier Description
Adjacent Fire Zones (Primary interface listed See Table 9A-203 for complete listing.)	FA7-207-01 FA7-209-01 FA7-210-01 FA7-211-01	-	- FA7-210-01 FA7-211-01	~~Walls of reinforced concrete or other material providing a minimum 3-hour fire resistance rating form the boundaries of this room. The door to the room is 3-hour fire rated and all openings and penetrations into the room are rated to provide 3-hour fire resistance.~~ The pump bay ceiling is 3-hour fire rated. The walls are made of reinforced concrete or other material that can provide a minimum of 3-hour fire rating. They form the boundaries of this fire area.