



FPL

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10 CFR 50.90

U. S. Nuclear Regulatory Commission
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Subject: St. Lucie Unit 2
Docket No. 50-389
License Amendment Request EDG Day Tank Fuel Volume Change

Pursuant to 10 CFR 50.90, Florida Power & Light Company (FPL) is submitting a request for an amendment to the Technical Specifications (TS) for St. Lucie Unit 2. The proposed amendment would revise the minimum required emergency diesel generator day tank fuel volume to accommodate the reduced BTU/lb content in ultra low sulfur diesel (ULSD) fuel oil.

The enclosure provides a description and assessment of the proposed changes, the existing TS pages marked up to show the proposed changes and the word processed TS changes. This license amendment proposed by FPL has been reviewed by the St. Lucie Plant Onsite Review Group. In accordance with 10 CFR 50.91(b)(1), a copy of the proposed license amendment is being forwarded to the State Designee for the State of Florida.

FPL is requesting that this be processed as a normal amendment request, with approval of the proposed amendment within one year of the submittal date. Once approved, the amendment shall be implemented within 90 days.

If you should have any questions, please contact Mr. Ken Frehafer at (772) 467-7748.

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

Executed on **JUN 21 2016**

Sincerely,

Christopher R. Costanzo
Site Vice President
St. Lucie Plant

Enclosure

cc: NRC Region II Administrator
St. Lucie Plant NRC Senior Resident Inspector
Ms. Cynthia Becker, Florida Department of Health

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EVALUATION OF THE PROPOSED CHANGE

St. Lucie Unit 2 Technical Specifications 3.8.1.1 and 3.8.1.2- Day Tank Required Volume Revision

SUMMARY DESCRIPTION

Pursuant to 10 CFR 50.90, Florida Power & Light Company (FPL) requests to amend Facility Operating License NPF-16 for St Lucie Unit 2. The proposed change would update the St. Lucie Unit 2 Technical Specifications (TS) to revise the emergency diesel generator (EDG) engine-mounted fuel tanks (day tanks) minimum volume from 200 gallons of fuel each to 238 gallons of fuel each. The fuel oil was previously changed to meet the requirements of the Clean Air Act, which mandates that ultra low sulfur diesel (ULSD) fuel oil replace low sulfur diesel fuel oil. The ULSD fuel oil may have a lower energy content (BTU/lb) which necessitates an increase in the storage requirement. FPL has administrative controls in place to ensure the Unit 2 EDG day tank levels are maintained at the proposed TS levels.

DETAILED DESCRIPTION

FPL is requesting NRC approval to update the St. Lucie Unit 2 TSs (3.8.1.1 and 3.8.1.2) by revising the engine-mounted fuel tanks (day tanks) minimum volume from 200 gallons of fuel each to 238 gallons of fuel each. The TS markups are provided in Attachment 1.

TECHNICAL EVALUATION

The day tanks and diesel oil storage tanks (DOSTs) are discussed in UFSAR Section 9.5.4, Diesel Generator Fuel Oil Storage and Transfer System. The design of the EDG fuel oil system provides electrical and physical separation of components to assure that the system can withstand an active or passive single failure and still provide oil storage capacity for at least seven days of continuous accident load operation with 10% margin (LOOP coincident with or without a LOCA) of one EDG set in accordance with the requirements of IEEE 308-1974 and ANSI N195-1976. Two completely redundant subsystems are provided, each consisting of the following:

- One DOST,
- Two day tanks,
- A transfer pump, to transfer oil from the DOST to both of the two interconnected day tanks,

- Interconnecting piping and valves designed with locked closed valves for transferring oil between redundant systems, and
- Associated instrumentation and controls.

IEEE 308-1974, Section 5.2.4 states:

(6) Energy Storage. Stored energy at the site shall have the capacity to operate the standby power supply while supplying post-accident power requirements to a unit for the longer of the following: a) seven days, b) time required to replenish the energy from sources away from the generating unit's site following the limiting design basis event.

ANSI N195-1976 states:

Section 5.2: The on-site oil storage shall be sufficient to operate the minimum number of diesel generators following the limiting design basis accident for either seven (7) days, or the time required to replenish the oil from sources outside the plant following any limiting design-basis event without interrupting the operation of the diesel, whichever is longer.

Section 5.4: The fuel oil storage capacity requirement of 5.2 or 5.3 shall be calculated based upon the diesel-generator(s) operating at the minimum required capacity for the plant condition which is most limiting for the calculation of such capacity. The design shall take into account the time dependence of diesel-generator loads ... The calculation shall include an explicit allowance for fuel consumption required for periodic testing ... A minimum margin of 10% shall be added to the calculated storage requirement if the conservative alternate calculation [i.e. continuous operation for 7 days at rated capacity] is not used.

Section 6.1: Each diesel shall be equipped with day or integral tank or tanks whose capacity is sufficient to maintain at least 60 minutes of operation at a level where oil is automatically added to the day or integral tank or tanks. This capacity shall be based on fuel consumption at a load of 100% of the continuous rating of the diesel plus a minimum margin of 10%.

The Clean Air Act mandated reductions in sulfur content of diesel fuels to 15 ppm sulfur. The refining industry phased in change from Low Sulfur Diesel (S500, <500 ppm sulfur) to ULSD fuel oil fuel (S15, <15 ppm sulfur) from 2006 to 2014. The energy content (BTU/lb), or "Higher Heating Value" (HHV), of ULSD fuel oil may be less than low sulfur diesel fuel oil, such that more fuel is required to meet the design requirements.

The NRC issued Information Notice (IN) 2006-22 to alert all licensees to the potential for new ULSD fuel oil to adversely impact engine performance, such as energy content

which may be reduced by 1.2% or more. The IN 2006-22 concerns were evaluated by FPL. A calculation was performed to determine the required DOST and EDG day tank minimum volumes using ULSD fuel oil with an assumed 2% lower BTU/lb content, and determined that an EDG day tank volume of 238 gallons was required to accommodate the assumed decrease in fuel oil BTU/lb content. The evaluation concluded that with the increased volumes, the use of ULSD fuel oil would not adversely impact the rating of the diesel or impact the engine's ability to achieve rated load. In accordance with NRC Administrative Letter 98-10, FPL imposed administrative controls requiring each EDG DOST and EDG day tank maintain the minimum required gallons of fuel until a TS change could be approved.

The change in both the DOST and the EDG day tank volumes was expected to be incorporated as part of the St. Lucie Unit 2 EPU LAR. However, only the DOST minimum volume change for ULSD fuel oil was processed as part of the EPU LAR submitted on February 25, 2011 by FPL in letter L-2011-021. The EPU LAR was subsequently approved by the NRC in the EPU Safety Evaluation dated September 24, 2012. Upon discovery of this oversight, this issue was entered into the St. Lucie corrective action program and the operable but nonconforming list; additionally the EDG day tank volume administrative controls remain in effect.

The proposed change to the TS for the minimum required volume is based on the incorporation of the increased volume requirements resulting from the use of ULSD fuel oil.

REGULATORY EVALUATION

Nuclear power plants are required to have redundant onsite emergency power supplies of sufficient capacity to perform their safety functions (e.g., power diesel engine-driven generator sets), assuming a single failure. Florida Power and Light's (FPL's) review focused on increases in the amount of fuel oil necessary for the system to perform its safety function using ULSD fuel oil.

Regulatory Requirements

Technical Specifications and Basis

TS 3.8.1.1:

As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. *Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and*
- b. *Two separate and independent diesel generators, each with:*

1. *Two separate engine-mounted fuel tanks containing a minimum volume of 200 gallons of fuel each,*
2. *A separate fuel storage system containing a minimum volume of 42,500 gallons of fuel, and*
3. *A separate fuel transfer pump.*

APPLICABILITY: MODES 1, 2, 3, and 4.

TS 3.8.1.2:

As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. *One circuit between the offsite transmission network and the onsite Class 1E distribution system, and*
- b. *One diesel generator with:*
 1. *Two engine-mounted fuel tanks containing a minimum volume of 200 gallons of fuel,*
 2. *A fuel storage system containing a minimum volume of 42,500 gallons of fuel, and*
 3. *A fuel transfer pump.*

APPLICABILITY: MODES 5 and 6.

As a result of the design requirements associated with the use of ULSD fuel oil, the EDG engine-mounted fuel tanks (day tanks) are currently being administratively controlled above the levels required by the TS. The TS bases document does not describe the day tank minimum volume.

Applicable General Design Criterion

As noted in UFSAR Section 3.1, the design bases of St. Lucie Unit 2 conforms with the "NRC General Design Criteria for Nuclear Power Plants" as specified in Appendix A to 10 CFR 50 effective May 21, 1971 and subsequently amended July 7, 1971 and February 12, 1976. St. Lucie Unit 2 fully satisfies and is in compliance with the General Design Criteria (GDC) as discussed in UFSAR Section 3.1.

The Safety Evaluation Report (SER) states the EDG fuel oil storage and transfer system is designed to meet the requirements of GDC 2, 4, 5, and 17.

- GDC-2 is described in UFSAR Section 3.1.2, Criterion 2 – Design Bases for Protection against Natural Phenomena:
- GDC-4 is described in UFSAR Section 3.1.4, Criterion 4 - Environmental and Missile Design Bases:
- GDC-5 is described in UFSAR Section 3.1.5, Criterion 5 – Sharing of Structures, Systems or Components:
- GDC-17 is described in UFSAR Section 3.1.17 Criterion 17 – Electrical Power Systems:

This TS change has no impact on the EDG physical structures nor EDG physical hardware. Therefore the EDG fuel oil storage and transfer system continues to meet all of the applicable GDC requirements using ULSD fuel oil.

Safety Analysis

UFSAR Section 9.5.4 describes the design of the Diesel Generator Fuel Oil Storage and Transfer System and states:

The Diesel Generator Fuel Oil System is designed to:

- a) provide oil storage capacity for at least seven days power operations of one diesel generator set in accordance with the requirements of IEEE 308-1974, "IEEE Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations," and ANSI N195-1976, "Fuel Oil System for Standby Diesel Generators.*
- b) maintain fuel supply to at least one diesel generator set, assuming a single active or passive failure of the system coincident with loss of offsite power.*
- c) meet seismic Category I and Quality Group C requirements (owner optional upgrade, see Table 3.2-1).*
- d) withstand maximum flood levels or tornado wind loadings without loss of function.*

UFSAR Section 9.5.4.2 describes the day tanks as follows:

Day tanks - Two day tanks in each subsystem provide fuel oil to their associated diesel generator set. Fuel oil to each diesel generator is supplied from its respective day tank by a dc motor driven fuel pump and an engine driven fuel pump. Two day tanks provide a usable volume which is sufficient for at least 1

hour 100% load operation of one diesel generator set as required by ANSI N195-1976.

The Diesel Generator set is provided with two skid mounted diesel oil day tanks. These tanks are located at the ends of the Diesel Generator set thereby providing physical separation from the hot surfaces such as the 22 inch Diesel Generator Exhaust Lines which are located in the center of the DG set.

The fuel oil piping between the day tanks is basically routed around the base of the diesel in order to minimize exposure to hot surfaces. In addition, all high temperature lines in the Diesel Generator room are insulated in order to prevent oil exposure to hot surfaces. Due to the Diesel Generator design, there are no open flames in the Diesel Generator Building.

UFSAR Table 9.5-1 provides Design Data for the day tanks.

The calculation for EDG fuel consumption shows that with the minimum day tank volume of 238 gallons of ULSD fuel, the requirement for two day tanks to provide a usable volume which is sufficient for at least 1 hour 100% load operation of one diesel generator set, plus a minimum margin of 10% is met. The day tank minimum volumes with the DOST minimum volume is sufficient for the EDG loading increase due to potential operation at the upper frequency limit of 60.6 HZ (60 HZ, +1%) and the EPU requirements.

Regulatory Guidance

The basis of the Standard Technical Specifications (STS) for CE plants (NUREG-1432 Volume 2 Revision 4.0) states in Section 3.8.1 AC Sources-Operating, Surveillance Requirements (SR):

SR 3.8.1.4

This SR provides verification that the level of fuel oil in the day tank [and engine mounted tank] is at or above the level at which fuel oil is automatically added. The level is expressed as an equivalent volume in gallons, and is selected to ensure adequate fuel oil for a minimum of 1 hour of DG operation at full load plus 10%.

The Diesel Generator Fuel Oil System increase in minimum day tank volume to compensate for the potentially lower energy content of ULSD fuel oil continues to meet the STS requirements to ensure adequate fuel oil for a minimum of 1 hour of DG operation at full load plus 10%.

The Standard Review Plan (SRP), NUREG-0800 Section 8.3.1 AC Power Systems (Onsite) describes specific areas of review and states:

6. Auxiliary Supporting Systems/Features

The instrumentation, control circuits, and power connections of auxiliary supporting systems and features are reviewed to determine that they are designed to the same criteria as those for the safety-related loads and power systems that they support. This will include an examination of the auxiliary supporting system component redundancy; power feed assignment to instrumentation, controls, and loads; initiating circuits; load characteristics; equipment identification scheme; and design criteria and bases for the installation of redundant cables.

The SRP, NUREG-0800 Section 8.3.1 AC Power Systems (Onsite) describes the review procedures and states:

The reviewer will also verify that the auxiliary supporting systems that are associated with the emergency diesel engine - such as the fuel oil storage and transfer system, cooling water system, starting air system, and lubrication system - are in accordance with the acceptance criteria.

The SRP, NUREG-0800 Section 8.3.1 AC Power Systems (Onsite) acceptance criteria includes GDC-2, 4, -5, -17. The Diesel Generator Fuel Oil System design remains the same, except for the increase in minimum day tank volume to compensate for the potentially lower energy content of ULSD fuel oil.

Evaluation of Compliance with Regulatory Requirements

Change to TSs 3.8.1.1 – A.C Sources-Operating and 3.8.1.2– A.C Sources-Shutdown

A proposed change to TS 3.8.1.1 and TS 3.8.1.2 is provided as part of the license amendment request to increase the day tank minimum volume to compensate for the potentially lower energy content of ULSD fuel oil. The proposed change increases the minimum volume for each engine-mounted fuel tank from 200 gallons to 238 gallons.

FPL has reviewed the assessment related to the amount of required fuel oil for the EDG and concludes that the assessment has adequately accounted for the effects of the increased fuel oil consumption. FPL concludes that the fuel oil storage and transfer system will continue to provide an adequate amount of fuel oil to allow the diesel generators to meet their current licensing basis with respect to the requirements of GDCs -2, -4, -5, and -17. The independence and redundancy features of the system are not impacted by the day tank minimum volume revision. The design for missile protection and protection against dynamic effects associated with the postulated rupture of piping will be maintained. Therefore, FPL finds the proposed change acceptable with respect to the fuel oil storage and transfer system.

Precedent

Revision of the DOST minimum volume for ULSD fuel oil was previously addressed for St. Lucie Units 1 and 2 in L-2010-259, dated November 22, 2010 and L-2011-021, dated February 25, 2011, respectively. The NRC accepted the TS changes in Safety Evaluations ML1218A019, dated July 9, 2012 and ML12235A463, dated September 24, 2012.

No Significant Hazards Consideration Determination

The proposed license amendment will update the St. Lucie Unit 2 TSs (3.8.1.1 and 3.8.1.2) to revise the engine-mounted fuel tanks (day tanks) minimum volume from 200 gallons of fuel each to 238 gallons of fuel each.

This change considers the use of Ultra Low Sulfur Diesel (ULSD) fuel oil which may have a lower energy content than the Low Sulfur Diesel fuel oil previously used. The revised minimum volume meets the fuel oil requirements for Emergency Diesel Generator (EDG) loading. FPL has imposed administrative controls which require that a minimum of 238 gallons of fuel be maintained in each engine-mounted fuel tank (day tank) in order to compensate for the potentially lower energy content of ULSD fuel oil.

Florida Power and Light has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The EDGs engine-mounted fuel oil tanks are part of a system used to mitigate the consequences of an accident and do not increase the probability of an accident previously evaluated. The increase in minimum fuel oil requirements enables operation of the EDGs to remain unchanged for ULSD fuel oil, thus the EDGs continue to be capable of performing their design functions. Acceptance criteria continue to be satisfied. Accordingly, the proposed change does not increase the consequences of an accident.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

No new accident scenarios, failure mechanisms, or limiting single failures are introduced as a result of the increase in minimum EDGs engine-mounted fuel oil tank volume. The proposed change has no adverse effect on any safety-related system and does not change the performance or integrity of any safety-related equipment. No new safety-related equipment is being added or replaced as a result of the proposed change.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

The calculation for EDG fuel consumption shows that with the minimum day tank volume of 238 gallons of ULSD fuel, the requirement for two day tanks to provide a usable volume which is sufficient for at least 1 hour 100% load operation of one diesel generator set, plus a minimum margin of 10% is met. The day tank minimum volumes with the DOST minimum volume is sufficient for the EDG loading increase due to potential operation at the upper frequency limit of 60.6 HZ (60 HZ, +1%) and the EPU requirements. The EDG fuel consumption analyses demonstrate that the EDG design continues to satisfy its safety function. The design basis limits for the accident and transient analyses will continue to meet their design criteria.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Florida Power and Light concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92, and, accordingly, a finding of "no significant hazards consideration" is justified.

Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

ENVIRONMENTAL CONSIDERATION

10 CFR 51.22(c)(9) provides criteria for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment as follows:

- (9) *Issuance of an amendment to a permit or license for a reactor under part 50 or part 52 of this chapter that changes a requirement or issuance of an exemption from a requirement, with respect to installation or use of a facility component located within the restricted area, as defined in part 20 of this chapter; or the issuance of an amendment to a permit or license for a reactor under part 50 or part 52 of this chapter that changes an inspection or a surveillance requirement; provided that:*
- i) *The amendment or exemption involves no significant hazards consideration;*
 - ii) *There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; and*
 - iii) *There is no significant increase in individual or cumulative occupational radiation exposure.*

FPL has reviewed this LAR and determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). The basis for this determination is as follows.

- i) As demonstrated in the 10 CFR 50.92 evaluation, the proposed amendment does not involve a significant hazards consideration.
- ii) The proposed change revises the Emergency Diesel Generator (EDG) engine-mounted fuel tanks (day tanks) minimum volume from 200 gallons of fuel each to 238 gallons of fuel each, to compensate for the potentially lower energy content of the ULSD fuel oil. The maximum volume is unchanged. Thus, the proposed amendment will not result in a significant change in the types or increase in the amounts of any effluents that may be released offsite.
- iii) The proposed change provides TS changes which assure that the EDG design requirements are met. Hence, the proposed amendment does not result in a significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need to be prepared in connection with the issuance of this amendment.

REFERENCES

1. St. Lucie Unit 2 UFSAR, Amendment 23
2. St. Lucie Unit 2 TSs Amendment 178
3. St. Lucie Unit 2 TS Bases Attachment 10 of ADM-25.04, Rev. 7, Electrical Power Systems
4. NUREG-0843, Safety Evaluation Report related to the operation of St. Lucie Plant, Unit No. 2, Docket 50389, dated October 1981
5. L-2010-259, dated November 22, 2010, St. Lucie Unit 1 License Amendment Request for Extended Power Uprate (ML103560419)
6. L-2011-021, dated February 25, 2011, St. Lucie Unit 2 License Amendment Request for Extended Power Uprate (ML110730116, ML110730283, ML110730284)
7. Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 213 to Facility Operating License No. DPR-67 Florida Power and Light Company, St. Lucie Plant, Unit No. 1, Docket 50-335, dated July 9, 2012 (ML1218A019)
8. Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 163 to Facility Operating License No. NPF-16 Florida Power and Light Company, St. Lucie Plant, Unit No. 2, Docket 50-389, dated September 24, 2012 (ML12235A463)
9. NRC Inspection Manual Chapter 0326 (IMC-0326), dated January 31, 2014, Operability Determinations and Functionality Assessments for Conditions Adverse to Quality or Safety
10. NRC Administrative Letter 98-10, dated December 29, 1998, Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety
11. IEEE 308 1974, IEE Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations
12. ANSI N195-1976, Fuel Oil System for Standby Diesel Generators
13. Information Notice 2006-22, dated October 12, 2006, New Ultra-Low-Sulfur Diesel Fuel Oil Could Adversely impact Diesel Engine Performance

14. NUREG-1432 Volume 2, Revision 4.0, Standard Technical Specifications Combustion Engineering Plants Bases
15. NUREG-0800, Section 8.3.1 AC Power Systems (Onsite), Revision 4, Standard Review Plan
16. 10CFR 51.22, June 7, 2013, Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review.
17. EPA-420-B-16-005, March 2016, Highway and Nonroad, Locomotive, and Marine (NRLM) Diesel Fuel Sulfur Standards

Attachment 1

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators, each with:
 1. Two separate engine-mounted fuel tanks containing a minimum volume of 200 gallons of fuel each,
 2. A separate fuel storage system containing a minimum volume of 42,500 gallons of fuel, and
 3. A separate fuel transfer pump.

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APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one offsite circuit of 3.8.1.1.a inoperable, except as provided in Action f. below, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2a.4 within 8 hours, unless it can be confirmed that the cause of the inoperable EDG does not exist on the remaining EDG*; restore the diesel generator to OPERABLE status within 14 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Additionally, within 4 hours from the discovery of concurrent inoperability of required redundant feature(s) (including the steam driven auxiliary feed pump in MODE 1, 2, and 3), declare required feature(s) supported by the inoperable EDG inoperable if its redundant required feature(s) is inoperable.

* If the absence of any common-cause failure cannot be confirmed, this test shall be completed regardless of when the inoperable EDG is restored to OPERABILITY.

Attachment 1

ELECTRICAL POWER SYSTEMS

A.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator with:

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1. Two engine-mounted fuel tanks containing a minimum volume of 200 gallons of fuel,
 2. A fuel storage system containing a minimum volume of 42,500 gallons of fuel, and
 3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or boron concentration, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 3.58 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.1.2.1 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 (except for requirement 4.8.1.1.2a.5).

Attachment 2

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generators, each with:
 1. Two separate engine-mounted fuel tanks containing a minimum volume of 238 gallons of fuel each,
 2. A separate fuel storage system containing a minimum volume of 42,500 gallons of fuel, and
 3. A separate fuel transfer pump.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one offsite circuit of 3.8.1.1.a inoperable, except as provided in Action f. below, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator of 3.8.1.1.b inoperable, demonstrate the OPERABILITY of the A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the EDG became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE EDG by performing Surveillance Requirement 4.8.1.1.2a.4 within 8 hours, unless it can be confirmed that the cause of the inoperable EDG does not exist on the remaining EDG*; restore the diesel generator to OPERABLE status within 14 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Additionally, within 4 hours from the discovery of concurrent inoperability of required redundant feature(s) (including the steam driven auxiliary feed pump in MODE 1, 2, and 3), declare required feature(s) supported by the inoperable EDG inoperable if its redundant required feature(s) is inoperable.

* If the absence of any common-cause failure cannot be confirmed, this test shall be completed regardless of when the inoperable EDG is restored to OPERABILITY.

Attachment 2

ELECTRICAL POWER SYSTEMS

A.C. SOURCES

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and
- b. One diesel generator with:
 1. Two engine-mounted fuel tanks containing a minimum volume of 238 gallons of fuel,
 2. A fuel storage system containing a minimum volume of 42,500 gallons of fuel, and
 3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, operations involving positive reactivity additions that could result in loss of required SHUTDOWN MARGIN or boron concentration, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 3.58 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.1.2.1 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 (except for requirement 4.8.1.1.2a.5).