



November 20, 2018  
L-2018-203  
10 CFR 50.90

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington D C 20555-0001

RE: Turkey Point Nuclear Plant, Unit 3 and 4  
Docket Nos. 50-250 and 50-251  
Renewed Facility Operating Licenses DPR-31 and DPR-41

Supplement to License Amendment Request 257, Modify Emergency Diesel Generator Partial-Load Rejection Surveillance Requirement

Reference:

1. FPL letter L-2018-044, License Amendment Request 257, Modify Emergency Diesel Generator Partial-Load Rejection Surveillance Requirement, May 14, 2018 (ADAMS Accession No. ML18134A264)

In Reference 1, Florida Power & Light Company (FPL) submitted license amendment request (LAR) 257, Modify Emergency Diesel Generator Partial-Load Rejection Surveillance Requirement, for Turkey Point Nuclear Plant Units 3 and 4 (Turkey Point), Renewed Facility Operating Licenses DPR-31 and DPR-41, respectively. The proposed license amendments modify the Turkey Point Technical Specifications (TS) by increasing the minimum load required for the Emergency Diesel Generator (EDG) partial-load rejection Surveillance Requirement (SR) in order to resolve a non-conservative requirement. The proposed license amendments additionally modify the EDG voltage and frequency limits for the SR and establish a recovery period (in seconds) for the EDG(s) to return to steady-state conditions.

Subsequent to the LAR 257 submittal, FPL became aware of statements in the LAR which asserted that EDG partial-load rejection testing is conducted with the tested EDG paralleled to the offsite electrical grid. Though such testing is not prohibited at Turkey Point, partial-load rejection testing is routinely performed with the EDG in isochronous mode (i.e. not paralleled). FPL concludes that this clarification does not materially affect the bases for the proposed change.

The enclosure to this letter provides this supplement to LAR 257 and replaces Reference 1 in its entirety. Changes to the Reference 1 submittal are highlighted with a revision bar in the margin of the document. Attachment 1 to the enclosure provides a mark-up of the existing TS pages to show the proposed changes. These pages are unchanged from the TS pages proposed in Reference 1. Attachment 2 provides a mark-up of the existing TS Bases pages to show the proposed changes. These pages supersede the TS Bases pages proposed in Reference 1. The TS Bases changes are provided for information only and will be incorporated in accordance with the TS Bases Control Program upon implementation of the amendments.

FPL has determined that this supplement to LAR 257 does not alter the conclusion in Reference 1 that the proposed changes do not involve a significant hazards consideration pursuant to 10 CFR 50.92(c), and there are no significant environmental impacts associated with the change. In accordance with 10 CFR 50.91(b)(1), a copy of the LAR supplement is being forwarded to the State designee for the State of Florida.

This letter contains no new regulatory commitments.

Should you have any questions regarding this submittal, please contact Mr. Robert Hess, Turkey Point Licensing Manager, at (305) 246-4112.

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

Executed on November 20, 2018.

Sincerely,



Robert Coffey  
Regional Vice President - Southern Region  
Florida Power & Light Company

Enclosure

cc: USNRC Regional Administrator, Region II  
USNRC Project Manager, Turkey Point Nuclear Plant  
USNRC Senior Resident Inspector, Turkey Point Nuclear Plant  
Ms. Cindy Becker, Florida Department of Health

## EVALUATION OF THE PROPOSED CHANGES

### Turkey Point Nuclear Plant Unit 3 and Unit 4 Supplement to License Amendment Request 257, Modify Emergency Diesel Generator Partial-Load Rejection Surveillance Requirement

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## 1.0 SUMMARY DESCRIPTION

Florida Power & Light Company (FPL) requests amendments to Renewed Facility Operating Licenses DPR-31 and DPR-41 for Turkey Point Nuclear Plant Units 3 and 4 (Turkey Point), respectively. The proposed license amendments modify the Turkey Point Technical Specifications (TS) by increasing the minimum load required for the Emergency Diesel Generator (EDG) partial-load rejection Surveillance Requirement (SR) in order to resolve a non-conservative requirement. The proposed license amendments additionally modify the EDG voltage and frequency limits for the SR and establish a recovery period (in seconds) for the EDG(s) to return to steady-state conditions.

## 2.0 DETAILED DESCRIPTION

### 2.1 System Design and Operation

In the event of a loss of the preferred power sources, station onsite power is supplied by four onsite EDGs and station batteries. Each EDG is connected to a separate power train with two trains per nuclear unit. EDGs 3A and 3B provide Unit 3 A-train, and B-train emergency power, respectively. EDGs 4A and 4B provide Unit 4 A-train and B-train emergency power, respectively.

The 3A and 3B EDG are General Motors (Electro Motive Division) EMD Model 999-20. Each set consists of an EMD design 20-645E4, turbocharged, two-cycle engine which is coupled to an EMD design Model A-20 generator. The 4A and 4B EDGs were supplied by Morrison-Knudsen, Inc. Each set consists of a General Motors Electro-Motive Division Model 20-645F4B design, turbocharged, two-cycle engine which is coupled to a Model 140 Electric Products generator. The 3A and 3B EDGs have a base continuous rating of 2500 kilowatts (kW). The 4A and 4B EDGs have a base continuous rating of 2874kW. All required EDG automatic and manual loads are within these continuous ratings.

The EDGs' are of seismic Class/Category I and designed so their integrity is not impaired by the maximum hypothetical earthquake, wind storm, floods or disturbances on the offsite electrical system. The EDGs' associated power, control and instrument cable systems, motors and other electrical equipment required for EDG operation are protected against the effects of a nuclear system accident or severe external environmental phenomena. With any credible single failure, the EDGs are capable of assuring a safe shutdown of both Units with a loss of offsite power concurrent with maximum hypothetical accident (MHA) conditions in one Unit.

Each EDG is started on the receipt of a Safety Injection Signal (SIS) on either Unit or the loss of voltage on its associated 4.16 kV bus. The EDGs are designed to obtain rated speed and voltage within 15 seconds following the receipt of a start signal. All required emergency shutdown loads are sequenced onto the EDG via its load sequencer. The timing contacts of the sequencer close the breakers or energize the contactors of the equipment required for safe shutdown of the Unit in a predetermined sequential order. To continue the shutdown on loss of power, all further operations are done manually.

The EDGs are equipped with protective and alarm relays which, with the exception of generator differential, are bypassed under emergency operation in response to a SIS on either Unit or a loss of voltage on its associated 4.16 kV bus. In addition, each EDG is equipped with an engine overspeed trip in order to prevent engine damage in the event of a large loss of load.

## 2.2 Current Requirements

TS 3.8.1.1 establishes the minimum AC electrical power sources required to be OPERABLE, including OPERABILITY requirements for EDGs 3A, 3B, 4A and 4B.

Surveillance Requirement (SR) 4.8.1.1.2 specifies the surveillances that must be performed in order to demonstrate OPERABILITY of EDGs 3A, 3B, 4A and 4B.

SR 4.8.1.1.2.g.2 states,

*In accordance with the Surveillance Frequency Control Program, during shutdown (applicable to only the two diesel generators associated with the unit):*

- 2) *Verifying the generator capability to reject a load of greater than or equal to 380 kw while maintaining voltage at 3950-4350 volts and frequency at  $60 \pm 0.6$  Hz;*

## 2.3 Description of the Proposed Change

The proposed license amendments modify the Turkey Point TS by increasing the minimum load required for the EDG partial-load rejection SR in order to resolve a non-conservative requirement. The proposed license amendments additionally modify the EDG voltage and frequency limits for the SR and establish a recovery period (in seconds) for the EDG(s) to return to steady-state conditions. More specifically, the proposed changes modify SR 4.8.1.1.2.g.2 by increasing the required rejection load from 380 kW to 392 kW in order to conservatively compensate for a worst-case EDG over-frequency of one-percent. The proposed changes additionally eliminate the voltage limit [3950 volts to 4350 volts] and increase the allowable frequency from  $60 \pm 0.6$  Hertz (Hz) to 66.25 Hz during the immediate aftermath of the partial-load rejection. The proposed changes additionally establish a two-second recovery period for the EDG(s) to return to the current SR 4.8.1.1.2.g.2 voltage and frequency limits of 3950 to 4350 volts and  $60 \pm 0.6$  Hz.

The proposed change is as follows:

*SR 4.8.1.1.2.g - In accordance with the Surveillance Frequency Control Program, during shutdown (applicable to only the two diesel generators associated with the unit):*

- 2). *Verifying the generator capability to reject a load of greater than or equal to ~~380~~ **392** kw ~~while maintaining voltage at 3950-4350 volts and frequency at  $60 \pm 0.6$  Hz~~ **without exceeding a frequency of 66.25 Hz. Within 2 seconds following the load rejection, the generator shall return to within** 3950 volts to 4350 volts and  $60 \pm 0.6$  Hz;*

## 2.4 Reason for the Proposed Changes

The proposed changes resolve a non-conservative TS requirement by increasing the minimum rejection load required by SR 4.8.1.1.2.g.2 in order to conservatively account for a worst-case EDG over-frequency of one-percent (1%). The proposed changes additionally align the SR voltage [3950 to 4350 volts] and frequency [ $60 \pm 0.6$  Hz] limits with the Turkey Point licensing basis for EDG steady-state conditions rather than for the immediate aftermath of a partial-load rejection. The proposed changes serve to alleviate overly restrictive SR 4.8.1.1.2.g.2 criteria and are consistent with the EDG partial-load rejection testing requirements of SR 3.8.1.9 of NUREG-1431, Standard Technical Specifications - Westinghouse Plants, Specifications (Reference 6.1).

### 3.0 **TECHNICAL EVALUATION**

The proposed changes modify SR 4.8.1.1.2.g.2 by increasing the required rejection load from 380 kW to 392 kW in order to conservatively compensate for a worst-case EDG over-frequency of one-percent. The proposed changes additionally eliminate the voltage limit [3950 to 4350 volts] and increase the allowable frequency from  $60 \pm 0.6$  Hertz (Hz) to 66.25 Hz during the immediate aftermath of the partial-load rejection. The proposed changes additionally establish a two-second recovery period for the EDG(s) to return to the current SR 4.8.1.1.2.g.2 voltage and frequency limits of 3950 to 4350 volts and  $60 \pm 0.6$  Hz.

At Turkey Point, EDG partial-load rejection testing is performed during refueling outages as part of the Engineered Safeguards Integrated Test. The purpose of partial-load rejection testing is to demonstrate EDG capability to reject the single largest accident load without exceeding the allowable voltage and frequency and while maintaining a specified margin to the overspeed trip. The testing ensures that the EDG will not be degraded for future application as a result of a partial-load rejection. At Turkey Point, the single largest load is a Component Cooling Water (CCW) pump, which is listed in the station's EDG load listing as having an equivalent kW rating of 380 kW. Hence, SR 4.8.1.1.2.g.2 specifies that the EDG(s) must be capable of withstanding a partial load rejection of greater than or equal to 380 kW. However, to ensure a load rejection of at least 380 kW, Turkey Point procedures requires tripping a CCW pump coincident with a Residual Heat Removal (RHR) pump, though other equipment combinations are procedurally allowed. Partial-load rejection testing is routinely performed with the EDG placed in isochronous mode.

#### 3.1 Increase Minimum Required Partial-Load Rejection Voltage

The proposed change increases the minimum rejection load for the EDG partial-load rejection surveillance test in order to resolve a non-conservative TS requirement. In June 2017, the station identified that the minimum load [380 kW] specified in SR 4.8.1.1.2.g.2 does not represent the EDG(s) single largest accident load because it does not compensate for a worst-case EDG over-frequency of one-percent. Compensating for EDG over-frequency, the minimum rejection load specified in SR 4.8.1.1.2.g.2 should be 392 kW. The issue was entered into the Turkey Point corrective action program (CAP) where it was determined that the station's existing administrative controls were sufficient to address the non-conservatism. Turkey Point procedures require tripping a CCW pump coincident with another major pump during partial load rejection testing and as a result, the rejected load has historically been in excess of 400 kW. The proposed change resolves the non-conservative SR requirement by increasing the minimum rejection load from 380 kW to 392 kW. Increasing the minimum allowable rejection load to 392 kW will not adversely affect EDG operation or the outcome of any design basis accident crediting EDG operability since the proposed load increase is bounded by the full-load rejection testing conducted in accordance with SR 4.8.1.1.2.g.3, and is thereby reasonable.

#### 3.2 Modify Limits Applicable Upon Immediate Partial-Load Rejection

The proposed change eliminates the current voltage limit [3950 to 4350 volts] and increases the frequency limit from  $60 \pm 0.6$  Hz to 66.25 Hz during the immediate aftermath of a partial-load rejection. The Extended Power Uprate (EPU) at Turkey Point modified the surveillance requirements of TS SR 4.8.1.1.2 such that EDG operability is demonstrated by verifying each EDG can start, accelerate and maintain the required generator voltage and frequency following an automatic start, a load rejection, an Engineered Safety Features (ESF) actuation and during a 24-hour test run. In order to encompass the worst case EDG loading conditions, the EPU tightened the EDG voltage and frequency tolerances for steady-state operation to the present SR 4.8.1.1.2.g.2 limits of 3950-4350 volts and  $60 \pm 0.6$  Hz. The revised tolerances resulting from the EPU

ensure that the EDGs will remain loaded within their respective ratings, safety-related equipment powered by the EDGs will operate within their ratings, and sufficient voltages will exist to ensure proper functioning equipment under steady state conditions. The revised steady state tolerances represent an approximately five-percent (5%) and one-percent (1%) deviation from EDG nominal operating voltage and frequency, respectively.

The proposed change is requested in part, because the EDG voltage and frequency limits currently imposed by SR 4.8.1.1.2.g.2 are overly restrictive for the immediate aftermath of a partial-load rejection. Overly restrictive criteria unnecessarily challenge the operability of the EDGs, thereby resulting in unplanned maintenance, plant shutdowns, etc. The marginal exceedance resulting from the overly restrictive criteria has no effect on EDG capability to perform its specified safety function. Moreover depending upon the maintenance required to achieve compliance, multiple EDG starts accompanied by rapid sequential loading may be required for post-maintenance testing, thereby challenging long-term reliability. In contrast, by establishing surveillance criteria commensurate with the EDG's licensing basis and expected behavior, the intent of the load rejection testing can be maintained while increasing EDG reliability and availability.

Allowing only a 1% deviation from the normal EDG operating frequency ( $60 \pm 0.6$  Hz) during the immediate aftermath of a partial-load rejection is unreasonable given the inertial effects on the generator as a result of the rapid decrease in forces opposing the generator rotation. This momentary increase in generator speed directly results in an increase in the EDG frequency and output voltage. Historically, the Turkey Point EDGs have reliably maintained the generator frequency within the current SR 4.8.1.1.2.g.2 limits upon the immediate rejection of the partial-load. However, the purpose of the frequency limit during this period of the transient is to ensure that a reasonable margin exists between the peak frequency and the overspeed trip setpoint. In this regard, the current upper frequency limit ( $60 + 0.6$  Hz) is well below the lowest procedurally allowable EDG overspeed trip setpoint of 68.33 Hz (1025 rpm). In contrast, Regulatory Guide (RG) 1.9, Selection, Design and Qualification and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants (Reference 6.2), states that during recovery from transients caused by the disconnection of the largest single load, the speed of the generator should not exceed the nominal speed plus 75% of the difference between nominal and the overspeed trip setpoint or 115% of nominal, whichever is lower. The premise is repeated, and thereby endorsed, in the bases for single largest load rejection testing specified in SR 3.8.1.9 of the Westinghouse STS (Reference 6.3). Using the RG 1.9 guidance, a frequency limit of 66.25 Hz is acceptable for the immediate aftermath of a partial-load rejection since the revised limit establishes a 25% margin below the lowest overspeed trip setpoint of 68.33 Hz (1025 rpm). Moreover, the proposed frequency limit will not adversely affect the operation of any plant equipment or the outcome of any design basis accident since the effects of the increased limit are bounded by the Turkey Point licensing basis for loaded equipment operating below the overspeed trip setpoint. Though FPL does not propose to adopt RG 1.9 in its entirety, aligning the maximum allowable frequency with the RG guidance ensures a commensurate level of safety when judged against the regulatory standards of Westinghouse STS (Reference 6.1), and is thereby reasonable.

Similarly, allowing less than a 5% deviation from the normal EDG operating voltage (3950 to 4350) during the immediate aftermath of partial-load rejection is unreasonable given the momentary increase in the output voltage that results. Historically at Turkey Point, the EDG voltage has been less than the 4350 volts allowed by SR 4.8.1.1.2.g.2 immediately following a partial-load rejection. However on occasion, the momentary voltage spike has marginally exceeded 4350 volts thereby causing the EDG to be declared inoperable. This is despite prior testing exhibiting peak voltages less than the voltage limit but with larger increases above the pre-test voltage. On average, a

momentary increase of 255 volts occurs during the transient. However, from the standpoint of the Turkey Point licensing basis, the maximum transient voltage is not a key attribute. Additionally, the EDG emergency loads are largely induction motors and are not significantly impacted by voltage variations since they increase current to maintain their respective rating. Moreover, the effects of the peak voltage on the EDG and safety-grade loads are minimal given the historical 255 volt increase that occurs during the partial load rejection, which is bounded by the peak voltage resulting from a full-load rejection conducted in accordance with SR 4.8.1.1.2.g.3. Hence, applying a maximum EDG voltage limit for the immediate aftermath of a partial-load rejection is neither aligned with the Turkey Point licensing basis nor provides a commensurate increase in safety and as such, no voltage limit is proposed for this period of the transient. Accordingly, the proposed change modifies SR 4.8.1.1.2.g.2 such that the current voltage limit [3950-4350 volts] applies after the proposed two-second recovery period discussed below. Eliminating the voltage limit applicable during the immediate aftermath of a partial-load rejection is consistent with SR 3.8.1.9 of the Westinghouse STS (Reference 6.1), which does not specify a voltage limit for this period of the transient, and is thereby reasonable.

### 3.3 Establish Partial-Load Rejection Steady-State Recovery Period

The proposed change establishes a two-second recovery period for the EDG to return to steady-state conditions following a partial-load rejection. As discussed earlier, the current EDG voltage and frequency tolerances specified in SR 4.8.1.1.2.g.2 represent an approximately five-percent (5%) and one-percent (1%) deviation from the normal EDG operating voltage and frequency, respectively. These tolerances are derived from the revised limitations established during the EPU for steady-state EDG operation and are thereby overly restrictive as operability criteria during the immediate aftermath of a load rejection. Establishing a recovery period for the EDG to return to the EPU specified steady-state conditions following rejection of a partial-load is reasonable given the momentary increase in generator speed immediately upon rejection of the load. The purpose of partial-load rejection testing is to demonstrate that the EDG(s) can recover from a transient caused by the loss of its single largest load without tripping on overspeed, thereby ensuring EDG availability for future application. Hence demonstrating that a reasonable margin exists between the time the EDG takes to recover from the load rejection and the sequencing of the next emergency load satisfies the intent of the partial-load rejection test. Per SR 3.8.1.9 of Westinghouse STS, Volume 2, Bases (Reference 6.3), upon rejection of the partial load, a recovery period equal to 60% of the load sequence interval associated with sequencing the largest load is recommended. Based upon the above accepted guidance and conservatively assuming a 5-second load sequence, a two-second recovery period is proposed for SR 4.8.1.1.2.g.2, which for the Turkey Point EDGs, is more restrictive than the 60% recovery period established in SR 3.8.1.9 of the Westinghouse STS. The proposed two-second recovery period also aligns with the full-load rejection test of SR 4.8.1.1.2.g.3, which requires the EDG voltage to return to less than or equal to 4784 volts within two seconds. The effect on the EDG immediately upon a partial-load rejection is bounded by the EDG effects resulting from a full-load rejection and for the recovery period thereafter, the EDG steady-state criteria established during the EPU remains unchanged. Moreover, the effect on equipment powered by the EDG is unchanged since the proposed recovery period only increases the duration in time before the EDG steady-state criteria is applied. As such, the proposed two-second recovery period will not adversely affect the operation of any plant equipment or the outcome of any design basis accident, and is thereby reasonable.

#### 4.0 **REGULATORY EVALUATION**

##### 4.1 Applicable Regulatory Requirements/Criteria

- 10 CFR 50.36(c)(2)(i) states that Limiting Conditions for Operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met.
- General Design Criteria (GDC) 17 of Appendix A to 10 CFR 50, states that where an active heat removal system is needed under accident conditions to prevent exceeding containment design pressure, this system shall perform its required function, assuming failure of any single active component.
- GDC 18 of Appendix A to 10 CFR 50, states that electrical power systems important to safety shall be designed to permit periodic inspection and testing of important areas and features, such as wiring, insulation, connections, and switchboards, to assess the continuity of the systems and the condition of their components. The systems shall be designed with a capability to test periodically (1) the operability and functional performance of the components of the systems, such as onsite power sources, relays, switches, and buses, and (2) the operability of the systems as a whole and, under conditions as close to design as practical, the full operational sequence that brings the systems into operation, including operation of applicable portions of the protection system, and the transfer of power among the nuclear power unit, the offsite power system, and the onsite power system.
- 1967 NRC Proposed GDC 39 states that alternate power systems shall be provided and designed with adequate independency, redundancy, capacity and testability to permit the functioning required of the engineered safety features. As a minimum, the onsite power system and the offsite power system shall each, independently, provide this capacity assuming a failure of a single active component in each system.

The proposed license amendments comply with the requirements of 10 CFR 50.36(c)(2) and do not alter the manner in which Turkey Point will be operated and maintained consistent with GDC(s) 17 and 18, and 1967 Proposed GDC 39. All applicable regulatory requirements will continue to be satisfied as a result of the proposed change.

##### 4.2 No Significant Hazards Consideration

The proposed license amendments modify the Turkey Point TS by increasing the minimum load required for the EDG partial-load rejection SR in order to resolve a non-conservative requirement. The proposed license amendments additionally modify the SR voltage and frequency limits and establish a recovery period (in seconds) for the EDG(s) to return to steady-state conditions. As required by 10 CFR 50.91(a), FPL has evaluated the proposed change using the criteria in 10 CFR 50.92 and has determined that the proposed change does not involve a significant hazards consideration. An analysis of the issue of no significant hazards consideration is presented below:

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

Response: No

The proposed changes modify an EDG surveillance test by aligning the voltage and frequency limits with the current licensing basis and the Westinghouse STS. As such, the proposed changes cannot be an initiator of any previously evaluated accident, increase its likelihood or increase the likelihood of an EDG malfunction or supported equipment. The proposed changes to the voltage and frequency limits for the immediate aftermath of a partial-load rejection and the proposed recovery period will not affect the manner in which EDGs are designed or operated. The EDGs have no time-dependent failure modes as a result of the proposed changes and will continue to operate within the parameters assumed in applicable accident analyses. Hence no impact on the consequences of any previously evaluated accident will result from the proposed changes.

Therefore, facility operation in accordance with the proposed changes would 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

The proposed changes modify an EDG surveillance test by aligning the voltage and frequency limits with the current licensing basis and the Westinghouse STS. The proposed changes do not modify the manner in which the EDGs are designed or operated and thereby cannot introduce new failure modes, impact existing plant equipment in a manner not previously evaluated or initiate a new type of malfunction or accident. The proposed changes serve to enhance EDG reliability and availability and as such, cannot adversely affect the EDGs ability to perform as originally designed, including their capability to withstand a worst case single failure.

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 proposed changes modify an EDG surveillance test by aligning the voltage and frequency limits with the current licensing basis and the Westinghouse STS. The proposed changes do not modify any setpoints for which protective actions associated with accident detection or mitigation are initiated. The proposed change neither affects the design of plant equipment nor the manner in which the plant is operated. The proposed changes increase the reliability and the availability of the EDGs and as such, cannot adversely impact any Turkey Point safety limits or limiting safety settings.

Therefore, operation of the facility in accordance with the proposed change will not involve a significant reduction in the margin of safety.

Based upon the above analysis, FPL concludes that the proposed license amendment does not involve a significant hazards consideration, under the standards set forth in 10

CFR 50.92, "Issuance of Amendment," and accordingly, a finding of "no significant hazards consideration" is justified.

#### 4.3 Conclusion

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.

### 5.0 **ENVIRONMENTAL CONSIDERATION**

The proposed amendment modifies a regulatory requirement with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or changes an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) 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 be prepared in connection with the proposed amendment.

### 6.0 **REFERENCES**

- 6.1 NUREG-1431, Standard Technical Specifications - Westinghouse Plants, Revision 4.0, Volume 1, Specifications (Accession No. ML12100A222)
- 6.2 Regulatory Guide 1.9, Selection, Design and Qualification and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants, Revision 3, July 1993 (Accession No. ML003739929)
- 6.3 NUREG-1431, Standard Technical Specifications - Westinghouse Plants, Revision 4.0, Volume 2, Bases (Accession No. ML12100A228)

**ATTACHMENT 1**

**PROPOSED TECHNICAL SPECIFICATION PAGES (MARKUP)**

(2 pages follow)

This page is for information only.  
No changes are proposed for this page.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- 4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE\*:
- a. In accordance with the Surveillance Frequency Control Program by:
- 1) Verifying the fuel volume in the day and skid-mounted fuel tanks (Unit 4-day tank only),
  - 2) Verifying the fuel volume in the fuel storage tank,
  - 3) Verifying the lubricating oil inventory in storage,
  - 4) Verifying the diesel starts and accelerates to reach a generator voltage and frequency of 3950-4350 volts and  $60 \pm 0.6$  Hz. In accordance with the Surveillance Frequency Control Program, these conditions shall be reached within 15 seconds after the start signal from normal conditions. For all other starts, warmup procedures, such as idling and gradual acceleration as recommended by the manufacturer may be used. The diesel generator shall be started for this test by using one of the following signals:
    - a) Manual, or
    - b) Simulated loss-of-offsite power by itself, or
    - c) Simulated loss-of-offsite power in conjunction with an ESF Actuation test signal, or
    - d) An ESF Actuation test signal by itself.
  - 5) Verifying the generator is synchronized, loaded\*\* to 2300 - 2500 kW (Unit 3), 2650-2850 kW (Unit 4)\*\*\*, operates at this loaded condition for at least 60 minutes and for Unit 3 until automatic transfer of fuel from the day tank to the skid mounted tank is demonstrated, and the cooling system is demonstrated OPERABLE.
  - 6) Verifying the diesel generator is aligned to provide standby power to the associated emergency buses.

\* All diesel generator starts for the purpose of these surveillances may be preceded by a prelube period as recommended by the manufacturer.

\*\* May include gradual loading as recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

\*\*\* Momentary transients outside these load bands do not invalidate this test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. Demonstrating that a fuel transfer pump starts automatically and transfers fuel from the storage system to the day tank, in accordance with the Surveillance Frequency Control Program; ✂
- c. In accordance with the Surveillance Frequency Control Program and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day and skid-mounted fuel tanks (Unit 4-day tank only); ✂
- d. In accordance with the Surveillance Frequency Control Program by checking for and removing accumulated water from the fuel oil storage tanks; ✂
- e. By verifying fuel oil properties of new fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.
- f. By verifying fuel oil properties of stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.
- g. In accordance with the Surveillance Frequency Control Program, during shutdown (applicable to only the two diesel generators associated with the unit): ✂
  - 1) Deleted
  - 2)\* Verifying the generator capability to reject a load of greater than or equal to ~~300 kw while maintaining voltage at~~ 3950-4350 volts and frequency at  $60 \pm 0.6$  Hz; 
  - 3)\* Verifying the generator capability to reject a load of greater than or equal to 2500 kW (Unit 3), 2874 kW (Unit 4) without tripping. The generator voltage shall return to less than or equal to 4784 volts within 2 seconds following the load rejection;
  - 4) Simulating a loss-of-offsite power by itself, and:
    - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses, and
    - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with any permanently

**392 kW without exceeding a frequency of 66.25 Hz. Within 2 seconds following the load rejection, the generator shall return to within**

\* For the purpose of this test, warmup procedures, such as idling, gradual acceleration, and gradual loading as recommended by the manufacturer may be used.

**ATTACHMENT 2**

**PROPOSED TECHNICAL SPECIFICATION BASES PAGES (MARKUP)**

(2 pages follow)

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**ATTACHMENT 2**  
**Technical Specification Bases**  
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3/4.8.1, 3/4.8.2 & 3/4.8.3 (Continued)

Surveillance Requirement 4.8.1.1.2.b demonstrates that each required Fuel Oil Transfer Pump operates and is capable of transferring fuel oil from its associated storage tank to its associated day tank. This is required to support continuous operation of standby power sources. This surveillance provides assurance that the Fuel Oil Transfer Pump and its control systems are capable of performing their associated support functions, and that the fuel oil piping system is intact and **NOT** obstructed. Instrument Air shall be available when performing this surveillance test. If the instrument Air System is **NOT** available, OPERABILITY of the EDG can be demonstrated by using a portable air or nitrogen source to locally open the EDG Day Tank Fill Valve. Normal Instrument Air Supply to the fill valve must be restored when the Instrument Air System is returned to service to maintain automatic operation of the system in accordance with the Diesel Fuel Oil Transfer System Design Basis.

**INSERT new paragraph** → Surveillance Requirement 4.8.1.1.2.g.7) demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal surveillances, and achieve the required voltage and frequency within 15 seconds. The 15 second time is derived from the requirements of the accident analysis to respond to a design large break Loss of Coolant Accident (LOCA). By performing this SR after 24 hours (or after two hours, in accordance with the proposed revised footnote), the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the EDG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain EDG OPERABILITY. The requirement that the diesel has operated for at least two hours at full load is based on NRC staff guidance for achieving hot conditions. Momentary transients due to changing bus loads do **NOT** invalidate this test.

Surveillance Requirement 4.8.1.1.2.g.7, verifying that the diesel generator operates for at least 24 hours, may be performed during POWER OPERATION (Mode 1) per Licensing Amendment # 221/215.

### INSERT

Surveillance Requirement 4.8.1.1.2.g.2 demonstrates that the EDGs are capable of rejecting the single largest accident load without exceeding the allowable voltage and frequency and while maintaining a specified margin to the overspeed trip. The testing ensures that the EDGs will not be degraded for future application as a result of a partial load rejection. The single largest EDG load is a CCW pump, which is listed in the station's EDG load listing as just below 392 kW for the equivalent kW rating with a worst-case 1% over-frequency. To ensure a load rejection of at least 392 kW, Turkey Point procedures require tripping a CCW pump coincident with another major load such as a RHR pump, though other equipment combinations are procedurally allowed. SR 4.8.1.1.2.g.2 specifies a maximum frequency of 66.25 Hz upon the immediate rejection of the partial load and requires the EDG to return to the steady state limits of 3950 volts to 4350 volts and  $60 \pm 0.6$  Hz within two seconds. The frequency limit for the immediate aftermath of the partial-load rejection (i.e. before 2 seconds has elapsed) is based upon Regulatory Guide (RG) 1.9 (Reference XX), which states that during recovery from transients caused by the disconnection of the largest single load, the speed of the generator should not exceed the nominal speed plus 75% of the difference between nominal and the overspeed trip setpoint or 115% of nominal, whichever is lower. The steady state voltage and frequency limits [3950 volts to 4350 volts and  $60 \pm 0.6$  Hz] are derived from the worst case EDG loading conditions established during the EPU. The two-second recovery period is based upon RG 1.9 which states that the voltage and frequency should be restored within 60% of the load sequence interval. SR 4.8.1.1.2.g.2 is consistent with the Westinghouse STS (Reference XX) for EDG largest single-load rejection testing.