

December 22, 2021

Docket Nos.: 50-424  
50-425

NL-21-0994

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

Southern Nuclear Operating Company  
Vogtle Electric Generating Plant Units 1 and 2  
Adoption of TSTF-283-A, Revision 3, "Modify Section 3.8 Mode Restriction Notes"

Ladies and Gentlemen:

Pursuant to 10 CFR 50.90, Southern Nuclear Operating Company (SNC) hereby requests a license amendment to Vogtle Electric Generating Plant (VEGP) Unit 1 renewed operating license NFP-68 and Unit 2 renewed operating license NFP-81. The proposed amendment is consistent with NRC-approved Technical Specification Task Force (TSTF)-283-A, Revision 3, "Modify Section 3.8 Mode Restriction Notes."

The proposed changes modify Technical Specifications (TS) 3.8.1, "AC Sources - Operating", and TS 3.8.4, "DC Sources – Operating". Consistent with TSTF-283-A, Notes would be added to allow greater flexibility in performing Surveillance Requirements (SRs) in Modes 1, 2, 3, or 4. The Surveillance Notes will allow full or partial performance of the SRs to re-establish Operability provided an assessment determines the safety of the plant is maintained or enhanced. These SRs currently have Notes prohibiting their performance in Modes 1 or 2, or in Modes 1, 2, 3, or 4.

The enclosure provides a basis for the proposed change. Attachments 1 and 2 contain marked-up TS pages and revised TS pages, respectively. Attachment 3 contains the marked-up TS Bases for information only.

SNC requests approval of the proposed amendment within one year from acceptance of the amendment for review. The proposed changes would be implemented within 60 days after issuance of the amendments.

In accordance with 10 CFR 50.91, a copy of this application is being provided to the designated Georgia Official.

This letter contains no regulatory commitments. If you have any questions, please contact Ryan Joyce at 205.992.6468.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 22 day of December 2021.

Respectfully submitted,



Cheryl A. Gayheart  
Director, Regulatory Affairs  
Southern Nuclear Operating Company

CAG/dsp/cbg

Enclosure: Basis for Proposed Changes

Attachments:     1. Proposed Technical Specification Changes (Marked-up Pages)  
                      2. Revised Technical Specification Pages  
                      3. Proposed Technical Specification Bases Changes (Mark-Up) for  
                          Information Only

cc:   Regional Administrator, Region II  
      NRR Project Manager – Vogtle 1 & 2  
      Senior Resident Inspector – Vogtle 1 & 2  
      State of Georgia Environmental Protection Division  
      RType: CVC7000

**ENCLOSURE**

**Southern Nuclear Operating Company  
Vogtle Electric Generating Plant – Units 1 and 2**

**Adoption of TSTF-283-A, Revision 3, "Modify Section 3.8 Mode Restriction Notes"**

**Basis for Proposed Changes**

## **Basis for Proposed Changes**

### **1.0 SUMMARY DESCRIPTION**

Southern Nuclear Operating Company (SNC) requests an amendment to Vogtle Electric Generating Plant (VEGP) Unit 1 renewed operating license NFP-68 and Unit 2 renewed operating license NFP-81. The proposed amendment is consistent with NRC-approved Technical Specification Task Force (TSTF) -283-A, Revision 3, "Modify Section 3.8 Mode Restriction Notes."

The proposed changes modify Technical Specification (TS) 3.8.1, "AC Sources - Operating", and TS 3.8.4, "DC Sources – Operating". Consistent with TSTF-283-A, Notes would be added to allow greater flexibility in performing Surveillance Requirements (SRs) in Modes 1 or 2, or in Modes 1, 2, 3, or 4. The Surveillance Notes will allow full or partial performance of the SRs to re-establish Operability provided an assessment determines the safety of the plant is maintained or enhanced. These SRs currently have Notes prohibiting their performance in Modes 1 or 2, or in Modes 1, 2, 3, or 4, as stated in each SR.

### **2.0 DETAILED DESCRIPTION**

#### **2.1 Reason for the Proposed Change**

The proposed changes will reduce the potential for a plant shutdown should corrective maintenance (planned or unplanned) performed during power operation result in the need to perform any of the revised SRs to demonstrate operability.

#### **2.2 Description of the Proposed Change**

The modified Surveillance Notes described below will allow full or partial performance of the SRs to re-establish Operability provided an assessment determines the safety of the plant is maintained or enhanced. These Surveillances currently have Notes prohibiting their performance in Modes 1 or 2, or in Modes 1, 2, 3, or 4, as stated in each SR.

These changes are consistent with the Nuclear Regulatory Commission (NRC)-approved TSTF-283-A, Revision 3 (Reference 1) on eliminating mode restrictions on the performance of SRs in TSs 3.8.1 and 3.8.4. The NRC has approved the TSTF for inclusion in the Improved Standard Technical Specifications and it is reflected in NUREG-1431, Revision 5, for Westinghouse plants, and for consideration for being added to plant TSs. The intent of the TSTF is to allow testing of the Emergency Diesel Generators (EDGs) and Class 1E batteries in modes not currently allowed for the purpose of maintaining or re-establishing system or component Operability (e.g., post maintenance testing), provided a safety assessment is made before the testing for Operability.

Numbering differences between the VEGP SRs and the NUREG-1431, Revision 5, formats are described below. The NUREG SR number is in parenthesis following the VEGP SR number. Each SR is annotated in parenthesis with (Insert 1) or (Insert 2), as appropriate per TSTF-283-A, to align with the marked-up TS pages in Attachment 1. The TS Bases are marked up in Attachment 3 using (Bases Insert 1) and (Bases Insert 2), as appropriate. For those SRs that include restrictions in Modes 3 and 4, the applicable Bases Insert is modified to include Modes 3 and 4. The TS Bases markups are included as information only. The following eight SRs are affected, followed by a summary of variations from TSTF-283-A.

## **Basis for Proposed Changes**

1. SR 3.8.1.10 (NUREG SR 3.8.1.11), which tests the response to a loss of offsite power signal, contains a Note prohibiting performance in Mode 1, 2, 3, or 4. The Note is proposed to be modified to state that performance is normally prohibited in Mode 1, 2, 3, or 4, but portions of the SR may be performed to reestablish operability provided an assessment determines the safety of the plant is maintained or enhanced. (Insert 2)
2. SR 3.8.1.11 (NUREG SR 3.8.1.12), which tests the response to an Engineered Safety Feature (ESF) initiation, contains a Note prohibiting performance in Mode 1 or 2. The Note is proposed to be modified to state that performance is normally prohibited in Mode 1 or 2, but portions of the SR may be performed to reestablish operability provided an assessment determines the safety of the plant is maintained or enhanced. (Insert 2)
3. SR 3.8.1.12 (NUREG SR 3.8.1.13), which tests that each DGs automatic trips are bypassed on a loss of voltage signal concurrent with an ESF initiation signal, contains a Note prohibiting performance in Mode 1 or 2. The Note is proposed to be modified to state that performance is normally prohibited in Mode 1 or 2, but the SR may be performed to reestablish operability provided an assessment determines the safety of the plant is maintained or enhanced. (Insert 1)
4. SR 3.8.1.15 (NUREG SR 3.8.1.16), which verifies transfer from DG to offsite power, contains a Note prohibiting performance in Mode 1, 2, 3, or 4. The Note is proposed to be modified to state that performance is normally prohibited in Mode 1, 2, 3, or 4, but the SR may be performed to reestablish operability provided an assessment determines the safety of the plant is maintained or enhanced. (Insert 1)
5. SR 3.8.1.16 (NUREG SR 3.8.1.17), which verifies that a DG operating in test mode will return to ready-to-load condition and energize the emergency load from offsite power on receipt of an ESF initiation signal, contains a Note prohibiting performance in Mode 1, 2, 3, or 4. The Note is proposed to be modified to state that performance is normally prohibited in Mode 1, 2, 3, or 4, but portions of the SR may be performed to reestablish operability provided an assessment determines the safety of the plant is maintained or enhanced. (Insert 2)
6. SR 3.8.1.17 (NUREG SR 3.8.1.18), which verifies the interval between each sequenced load, contains a Note prohibiting performance in Mode 1, 2, 3, or 4. The Note is proposed to be modified to state that performance is normally prohibited in Mode 1, 2, 3, or 4, but the SR may be performed to reestablish operability provided an assessment determines the safety of the plant is maintained or enhanced. (Insert 1)
7. SR 3.8.1.18 (NUREG SR 3.8.1.19), which verifies the response to a loss of offsite power signal and ESF actuation signal, contains a Note prohibiting performance in Mode 1, 2, 3, or 4. The Note is proposed to be modified to state that performance is normally prohibited in Mode 1, 2, 3, or 4, but portions of the SR may be performed to reestablish operability provided an assessment determines the safety of the plant is maintained or enhanced. (Insert 2)
8. SR 3.8.4.3 (NUREG SR 3.8.4.3), which verifies battery capacity for emergency loads, contains a Note prohibiting performance in Mode 1, 2, 3, or 4. The Note is proposed to be modified to state that performance is normally prohibited in Mode 1, 2, 3, or 4, but portions of the SR may be performed to reestablish operability provided an assessment determines the safety of the plant is maintained or enhanced. (Insert 2)

SNC is proposing the following variations from the TS changes described in TSTF-283-A. These variations do not affect the applicability of TSTF-283-A.

## **Basis for Proposed Changes**

The VEGP TS contain a Surveillance Frequency Control Program. Therefore, the Surveillance Requirement Frequencies for TS 3.8 are "In accordance with the Surveillance Frequency Control Program."

The VEGP TS do not contain several of the TS 3.8.1 SRs found in NUREG 1431, Revision 5. Specifically, the following SRs from NUREG-1431, Revision 5 are not in the VEGP TS: SR 3.8.1.8, SR 3.8.1.9, SR 3.8.1.10, and SR 3.8.1.14. As such, addition of the TSTF-283-A changes that provide exceptions to the Mode restrictions in these SRs are not necessary and are not adopted. Additionally, NUREG-1431 was updated previously with extensive changes in the TS 3.8.4 SRs. Therefore, the NUREG 1431, Revision 5 SR numbering and Notes do not necessarily match the SRs in TSTF-283-A. Using the content of the SR and the existing Notes in the VEGP TS, only one VEGP 3.8.4 SR matches the changes described in NUREG-1431, Revision 5, and is described in Item 8 above.

The TSTF-283-A Bases changes associated with VEGP SRs 3.8.1.10, 3.8.1.15, 3.8.1.16, 3.8.1.17, 3.8.1.18 and 3.8.4.3 incorrectly state that the associated Notes restrict performance of the Surveillances in Mode 1 and 2. These Surveillances actually restrict performance of the Surveillances in Mode 1, 2, 3, or 4. This error is corrected in the VEGP TS Bases markups included in Attachment 3.

### **3.0 TECHNICAL EVALUATION**

#### Summary of the Approved Traveler Justification

The allowance to perform the SRs in currently prohibited Modes is restricted to only allow the SRs to be performed for the purpose of reestablishing Operability (e.g., post-work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated Operability concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed SR, a successful SR, and a perturbation of the offsite or onsite power system when they are tied together or operated independently for the SR; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the SR is performed. Risk insights or deterministic methods may be used for this assessment.

Note that the Maintenance Rule provision contained in 10 CFR 50.65(a)(4) states that before performing maintenance activities, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. This includes the performance of SRs to reestablish Operability. Therefore, in addition to the assessment required by the SR Notes, an assessment of plant risk will also be performed.

The justification presented in the approved Traveler is applicable to VEGP. The Traveler is being adopted by VEGP with no significant changes beyond those described above in Section 2.0.

The NRC implemented the approved Traveler, and its contents are reflected in NUREG-1431, Revision 5. NUREG-1431, Revision 5, was used for the NUREG SR numbers impacted.

## Basis for Proposed Changes

### 4.0 REGULATORY EVALUATION

#### 4.1 Applicable Regulatory Requirements/Criteria

The proposed change has been evaluated to determine whether applicable regulations and requirements continue to be met.

##### Criterion 17 - Electrical Power Systems

*An onsite electric power system and an offsite electric power system shall be provided to permit the functioning of structures, systems, and components important to safety. The safety function for each system (assuming that the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.*

*The onsite electric power supplies, including the batteries, and the onsite electric distribution system shall have sufficient independence, redundancy, and testability to perform their safety functions, assuming a single failure.*

*Electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights-of-way) designed and located so as to minimize, to the extent practical, the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. A switchyard common to both circuits is acceptable. Each of these circuits shall be designed to be available in sufficient time, following the loss of all onsite alternating current power sources and the offsite electric power circuit, to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. One of these circuits shall be designed to be available within a few seconds following a LOCA to assure that core cooling, containment integrity, and other vital safety functions are maintained.*

*Provisions shall be included to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of power generated by the nuclear power unit, the loss of power from the transmission network, or the loss of power from the onsite electric power supplies.*

##### Discussion

An onsite electric power system and an offsite electric power system are provided to permit the functioning of structures, systems, and components important to safety. Each Class 1E electric power system is designed with adequate independence, capacity, redundancy, and testability to ensure the functioning of engineered safety features (ESF). Independence is provided by physical separation and electrical isolation of component and cables.

A failure of a single component will not prevent the safety-related systems from performing their function. Each of the connected preferred offsite power circuits is designed to be available in sufficient time, following a loss of all onsite power sources and the other offsite electric power circuit, to assure that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded.

## Basis for Proposed Changes

Emergency onsite AC power is furnished by two diesel generators per unit. Each diesel generator is connected to a Class 1E bus. The ESF loads are divided between the Class 1E buses in balanced, redundant load groupings. Each diesel generator is capable of supplying sufficient power in sufficient time for the operation of the ESF required for the unit during a postulated LOCA. During a postulated LOCA, both diesel generators start automatically. If preferred power is available to the Class 1E bus following a LOCA, the ESF loads will be started sequentially. However, in the event that preferred power is lost, the load sequencing system will shed all loads, connect each diesel generator to its associated Class 1E bus, and sequentially start the ESF equipment. The diesel generators are arranged so that a failure of a single component will not prevent the safe shutdown of the reactor.

The onsite Class 1E DC power supply consists of four independent battery systems. Failure of a single component in the DC power supply will not impair function of the ESF required to maintain the reactor in a safe condition.

### Criterion 18 - Inspection And Testing Of Electric Power Systems

*Electric power systems important to safety shall be designed to permit appropriate 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 operation 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.*

#### Discussion

Class 1E electric power systems are designed as described below in order that the following aspects of the system can be periodically tested:

- A. The operability and functional performance of the components of Class 1E electric power systems (diesel generators, ESF buses, DC system).
- B. The operability of these electric power systems as a whole and under conditions as close to design as practical, including the full operational sequence that actuates these systems.

The DC system is provided with detectors to indicate and alarm when there is a ground existing on any part of the system. During plant operation, normal maintenance may be performed. Provisions for the testing of Class 1E AC electric power systems, Class 1E DC power systems, and the standby power supplies (diesel generators) are described in the TS.

### Regulatory Guide 1.108, Revision 1, August 1977, Periodic Testing Of Diesel Generator Units Used As Onsite Electric Power Systems At Nuclear Power Plants

*This guide describes a method acceptable to the NRC for complying with regulations with regard to periodic testing of diesel electric power units to ensure that the diesel electric power systems will meet their availability requirements.*

#### Discussion

This guide has been withdrawn and superseded by Regulatory Guide 1.9, Revision 3, Selection, Design, and Qualification of Diesel-Generator Units Used as Standby (Onsite) Electrical Power Systems at Nuclear Power Plants. Regulatory Guide 1.108 was the original licensing basis for diesel generator testing; however, since the time that Regulatory Guide 1.108 was withdrawn,



## Basis for Proposed Changes

Regulatory Guide 1.9, Revision 3, has been used in specific instances to revise diesel generator testing requirements for VEGP. Therefore, diesel generator testing requirements at VEGP represent a combination of Regulatory Guide 1.108 and Regulatory Guide 1.9, Revision 3.

Title 10 of the Code of Federal Regulations Part 50.36(c)(3), states: *Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.*

The regulations do not specify details such as special Mode restrictions or allowing the crediting of unplanned events as satisfying a Surveillance Requirement.

The proposed changes are consistent with the regulatory requirements stated above. They do not change the type of testing performed or the frequency of testing performed. They will allow testing to reestablish operability of affected systems.

### 4.2 Precedent

Two recent plant-specific NRC approvals of the changes in TSTF-283-A are:

- Edwin I. Hatch Nuclear Plant, Units 1 and 2, dated September 29, 2016 (Reference 2).
- Joseph M. Farley Nuclear Plant, Units 1 and 2, dated August 3, 2016 (Reference 3).

These amendments approved a number of TSTFs for these stations, including TSTF-283-A.

### 4.3 No Significant Hazard Consideration Determination Analysis

Southern Nuclear Operating Company (SNC) has evaluated the proposed changes to the Technical Specifications (TS) using the criteria in 10 CFR 50.92 and has determined that the proposed changes do not involve a significant hazards consideration.

The proposed changes modify TS 3.8.1, "AC Sources - Operating", and TS 3.8.4, "DC Sources - Operating". Consistent with Technical Specification Task Force (TSTF)-283-A, Notes would be added to allow greater flexibility in performing Surveillance Requirements (SRs) in Modes 1 or 2, or in Modes 1, 2, 3, or 4. The Surveillance Notes will allow full or partial performance of the SRs to re-establish Operability provided an assessment determines the safety of the plant is maintained or enhanced. These Surveillances currently have Notes prohibiting their performance in Modes 1 or 2, or in Modes 1, 2, 3, or 4, as noted in each specific SR.

As required by 10 CFR 50.91(a), the SNC analysis of the issue of no significant hazards consideration is presented below:

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

Response: No

The proposed changes modify Mode restriction Notes to allow performance of the Surveillance in whole or in part to reestablish AC and DC electrical power systems Operability, and to allow the crediting of unplanned events that satisfy the Surveillances.

## **Basis for Proposed Changes**

The AC and DC electrical power systems and their associated emergency loads are accident mitigating features and are not an initiator of any accident previously evaluated. As a result, the probability of any accident previously evaluated is not significantly increased. To manage any increase in risk, the proposed changes require an assessment to verify that plant safety will be maintained or enhanced by performance of the Surveillance in the current prohibited Modes. The radiological consequences of an accident previously evaluated during the period that the AC and DC electrical power systems are being tested to reestablish Operability are no different from the radiological consequences of an accident previously evaluated while the AC and DC electrical power systems are inoperable. As a result, the consequences of any accident previously evaluated are not increased.

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

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

Response: No

The proposed changes do not involve a physical alteration to the plant (i.e., no new or different type of equipment will be installed) or a change to the methods governing normal plant operation. The changes do not alter the assumptions made in the safety analysis.

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

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

Response: No

The purpose of Surveillances is to verify that equipment is capable of performing its assumed safety function. The proposed changes will only allow the performance of the Surveillances to reestablish Operability, and the proposed changes may not be used to remove an AC and DC electrical power system from service. In addition, the proposed changes will potentially shorten the time that an AC and DC electrical power system is unavailable because testing to reestablish Operability can be performed without a plant shutdown. The proposed changes also require an assessment to verify that plant safety will be maintained or enhanced by performance of the Surveillance in the normally prohibited Modes. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

## **4.4 Conclusion**

In conclusion, based on the considerations discussed above, SNC concludes: (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 the health and safety of the public.

## **Basis for Proposed Changes**

### **5.0 ENVIRONMENTAL CONSIDERATION**

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20, and would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change 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 change. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

### **6.0 REFERENCES**

1. Technical Specification Task Force (TSTF)-283-A, Rev 3, "Modification 3.8 Mode Restriction Notes," approved April 13, 2000.
2. Letter from Nuclear Regulatory Commission to SNC, "Edwin I. Hatch Nuclear Plant, Unit Nos. 1 and 2 - Issuance of Amendments Regarding Multiple Technical Specification Changes," dated September 29, 2016. ML16231A041
3. Letter from Nuclear Regulatory Commission to SNC, "Joseph M. Farley Nuclear Plant, Units 1 and 2 – Issuance of Amendments Adopting 21 Previously NRC-Approved TSTF Travelers and One request not Associated with TSTF Travelers," dated August 3, 2016. ML15233A448

**Southern Nuclear Operating Company  
Vogtle Electric Generating Plant – Units 1 and 2**

**Adoption of TSTF-283-A, Revision 3, "Modify Section 3.8 Mode Restriction Notes"**

**Attachment 1**

**Proposed Technical Specification Changes (Marked-up Pages)**

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.10 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal:</p> <ol style="list-style-type: none"> <li>a. De-energization of emergency buses;</li> <li>b. Load shedding from emergency buses;</li> <li>c. DG auto-starts from standby condition and:               <ol style="list-style-type: none"> <li>1. energizes permanently connected loads in <math>\leq 11.5</math> seconds,</li> <li>2. energizes auto-connected shutdown loads through automatic load sequencer,</li> <li>3. maintains steady state voltage <math>\geq 3750</math> V and <math>\leq 4330</math> V,</li> <li>4. maintains steady state frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz, and</li> <li>5. supplies permanently connected and auto-connected shutdown loads for <math>\geq 5</math> minutes.</li> </ol> </li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.11</p> <p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This Surveillance shall not <b>normally</b> be performed in MODE 1 or 2. However, <b>portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.</b> Credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and:</p> <ol style="list-style-type: none"> <li>a. In <math>\leq 11.4</math> seconds after auto-start and during tests, achieves voltage <math>\geq 3750</math> V and <math>\leq 4330</math> V;</li> <li>b. In <math>\leq 11.4</math> seconds after auto-start and during tests, achieves frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz;</li> <li>c. Operates for <math>\geq 5</math> minutes;</li> <li>d. Permanently connected loads remain energized from the offsite power system; and</li> <li>e. Emergency loads are energized or auto-connected through the automatic load sequencer from the offsite power system.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.12 -----NOTE-----</p> <p>This Surveillance shall not <b>normally</b> be performed in MODE 1 or 2. However, <b>this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.</b> Credit may be taken for unplanned events that satisfy this SR.</p> <p>-----</p> <p>Verify each DG's automatic trips are bypassed on actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal except:</p> <ol style="list-style-type: none"> <li>Engine overspeed;</li> <li>Generator differential current; and</li> <li>Low lube oil pressure;</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.13 -----NOTES-----</p> <ol style="list-style-type: none"> <li>Momentary transients outside the kW and kVAR load ranges do not invalidate this test.</li> <li>Credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify each DG operates for <math>\geq 24</math> hours while maintaining voltage <math>\leq 4330</math> V:</p> <ol style="list-style-type: none"> <li>For <math>\geq 2</math> hours loaded <math>\geq 6900</math> kW and <math>\leq 7700</math> kW and operating as close as practicable to 3390 kVAR; and</li> <li>For the remaining hours of the test loaded <math>\geq 6500</math> kW and <math>\leq 7000</math> kW and operating as close as practicable to 3390 kVAR.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.14 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated <math>\geq 2</math> hours loaded <math>\geq 6500</math> kW and <math>\leq 7000</math> kW.</li> </ol> <p>Momentary transients outside of load range do not invalidate this test.</p> <ol style="list-style-type: none"> <li>2. All DG starts may be preceded by an engine prelube period.</li> </ol> <p>-----</p> <p>Verify each DG starts and achieves, in <math>\leq 11.4</math> seconds, voltage <math>\geq 4025</math> V, and <math>\leq 4330</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.15 -----NOTE-----</p> <p>This Surveillance shall not <b>normally</b> be performed in MODE 1, 2, 3, or 4. However, <b>this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.</b> Credit may be taken for unplanned events that satisfy this SR.</p> <p>-----</p> <p>Verify each DG:</p> <ol style="list-style-type: none"> <li>a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power;</li> <li>b. Transfers loads to offsite power source; and</li> <li>c. Returns to ready-to-load operation.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.16</p> <p>-----NOTE----- This Surveillance shall not <b>normally</b> be performed in MODE 1, 2, 3, or 4. However, <b>portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.</b> <del>€</del>Credit may be taken for unplanned events that satisfy this SR. -----</p> <p>Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by:</p> <ol style="list-style-type: none"> <li>Returning DG to ready-to-load operation; and</li> <li>Automatically energizing the emergency load from offsite power.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.17</p> <p>-----NOTE----- This Surveillance shall not <b>normally</b> be performed in MODE 1, 2, 3, or 4. However, <b>this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.</b> <del>€</del>Credit may be taken for unplanned events that satisfy this SR. -----</p> <p>Verify interval between each sequenced load block is within <math>\pm 10\%</math> of design interval for each load sequencer.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.18</p> <p>-----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This Surveillance shall not <b>normally</b> be performed in MODE 1, 2, 3, or 4. However, <b>portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.</b> Credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal:</p> <ol style="list-style-type: none"> <li>a. De-energization of emergency buses;</li> <li>b. Load shedding from emergency buses; and</li> <li>c. DG auto-starts from standby condition and:               <ol style="list-style-type: none"> <li>1. energizes permanently connected loads in <math>\leq 11.5</math> seconds,</li> <li>2. energizes auto-connected emergency loads through load sequencer,</li> <li>3. achieves steady state voltage: <math>\geq 3750</math> V and <math>\leq 4330</math> V,</li> <li>4. achieves steady state frequency: <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz, and</li> <li>5. supplies permanently connected and auto-connected emergency loads for <math>\geq 5</math> minutes.</li> </ol> </li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.2      Verify the battery charger supplies:                                            ≥ 400 amps for System A and B                                            ≥ 300 amps for System C, and                                            ≥ 200 amps for System D                                            at greater than or equal to the minimum                                            established float voltage for ≥ 8 hours for Systems                                            A and B and ≥ 3 hours for Systems C and D.</p> <p><u>OR</u></p> <p>Verify each battery charger can recharge the                      battery to the fully charged state within 12 hours                      while supplying the largest combined demands of                      the various continuous steady state loads, after a                      battery discharge to the bounding design basis                      event discharge state.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.4.3      -----NOTES-----</p> <ol style="list-style-type: none"> <li>1.      The modified performance discharge test in                                            SR 3.8.6.6 may be performed in lieu of the                                            service test in SR 3.8.4.3.</li> <li>2.      This Surveillance shall not <b>normally</b> be                                            performed in MODE 1, 2, 3, or 4. However,                                            <b>portions of the Surveillance may be</b>                                            <b>performed to reestablish OPERABILITY</b>                                            <b>provided an assessment determines the</b>                                            <b>safety of the plant is maintained or</b>                                            <b>enhanced. eCredit may be taken for</b>                                            unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify battery capacity is adequate to supply, and                      maintain in OPERABLE status, the required                      emergency loads for the design duty cycle when                      subjected to a battery service test.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

**Southern Nuclear Operating Company  
Vogtle Electric Generating Plant – Units 1 and 2**

**Adoption of TSTF-283-A, Revision 3, "Modify Section 3.8 Mode Restriction Notes"**

**Attachment 2**

**Revised Technical Specification Pages**

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.10 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal:</p> <ol style="list-style-type: none"> <li>a. De-energization of emergency buses;</li> <li>b. Load shedding from emergency buses;</li> <li>c. DG auto-starts from standby condition and:               <ol style="list-style-type: none"> <li>1. energizes permanently connected loads in <math>\leq 11.5</math> seconds,</li> <li>2. energizes auto-connected shutdown loads through automatic load sequencer,</li> <li>3. maintains steady state voltage <math>\geq 3750</math> V and <math>\leq 4330</math> V,</li> <li>4. maintains steady state frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz, and</li> <li>5. supplies permanently connected and auto-connected shutdown loads for <math>\geq 5</math> minutes.</li> </ol> </li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.11      -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and:</p> <ol style="list-style-type: none"> <li>a. In <math>\leq 11.4</math> seconds after auto-start and during tests, achieves voltage <math>\geq 3750</math> V and <math>\leq 4330</math> V;</li> <li>b. In <math>\leq 11.4</math> seconds after auto-start and during tests, achieves frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz;</li> <li>c. Operates for <math>\geq 5</math> minutes;</li> <li>d. Permanently connected loads remain energized from the offsite power system; and</li> <li>e. Emergency loads are energized or auto-connected through the automatic load sequencer from the offsite power system.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.12 -----NOTE-----</p> <p>This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.</p> <p>-----</p> <p>Verify each DG's automatic trips are bypassed on actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal except:</p> <ul style="list-style-type: none"> <li>a. Engine overspeed;</li> <li>b. Generator differential current; and</li> <li>c. Low lube oil pressure;</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.13 -----NOTES-----</p> <ul style="list-style-type: none"> <li>1. Momentary transients outside the kW and kVAR load ranges do not invalidate this test.</li> <li>2. Credit may be taken for unplanned events that satisfy this SR.</li> </ul> <p>-----</p> <p>Verify each DG operates for <math>\geq 24</math> hours while maintaining voltage <math>\leq 4330</math> V:</p> <ul style="list-style-type: none"> <li>b. For <math>\geq 2</math> hours loaded <math>\geq 6900</math> kW and <math>\leq 7700</math> kW and operating as close as practicable to 3390 kVAR; and</li> <li>b. For the remaining hours of the test loaded <math>\geq 6500</math> kW and <math>\leq 7000</math> kW and operating as close as practicable to 3390 kVAR.</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.14 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated <math>\geq 2</math> hours loaded <math>\geq 6500</math> kW and <math>\leq 7000</math> kW.</li> </ol> <p>Momentary transients outside of load range do not invalidate this test.</p> <ol style="list-style-type: none"> <li>2. All DG starts may be preceded by an engine prelube period.</li> </ol> <p>-----</p> <p>Verify each DG starts and achieves, in <math>\leq 11.4</math> seconds, voltage <math>\geq 4025</math> V, and <math>\leq 4330</math> V and frequency <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.15 -----NOTE-----</p> <p>This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.</p> <p>-----</p> <p>Verify each DG:</p> <ol style="list-style-type: none"> <li>a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power;</li> <li>b. Transfers loads to offsite power source; and</li> <li>c. Returns to ready-to-load operation.</li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.16</p> <p>-----NOTE-----</p> <p>This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.</p> <p>-----</p> <p>Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by:</p> <ul style="list-style-type: none"> <li>a. Returning DG to ready-to-load operation; and</li> <li>b. Automatically energizing the emergency load from offsite power.</li> </ul>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.17</p> <p>-----NOTE-----</p> <p>This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.</p> <p>-----</p> <p>Verify interval between each sequenced load block is within <math>\pm 10\%</math> of design interval for each load sequencer.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.18 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. All DG starts may be preceded by an engine prelube period.</li> <li>2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal:</p> <ol style="list-style-type: none"> <li>a. De-energization of emergency buses;</li> <li>b. Load shedding from emergency buses; and</li> <li>c. DG auto-starts from standby condition and:               <ol style="list-style-type: none"> <li>1. energizes permanently connected loads in <math>\leq 11.5</math> seconds,</li> <li>2. energizes auto-connected emergency loads through load sequencer,</li> <li>3. achieves steady state voltage: <math>\geq 3750</math> V and <math>\leq 4330</math> V,</li> <li>4. achieves steady state frequency: <math>\geq 58.8</math> Hz and <math>\leq 61.2</math> Hz, and</li> <li>5. supplies permanently connected and auto-connected emergency loads for <math>\geq 5</math> minutes.</li> </ol> </li> </ol>	<p>In accordance with the Surveillance Frequency Control Program</p>

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.2      Verify the battery charger supplies:                           ≥ 400 amps for System A and B                           ≥ 300 amps for System C, and                           ≥ 200 amps for System D                           at greater than or equal to the minimum                           established float voltage for ≥ 8 hours for Systems                           A and B and ≥ 3 hours for Systems C and D.</p> <p><u>OR</u></p> <p>Verify each battery charger can recharge the  battery to the fully charged state within 12 hours  while supplying the largest combined demands of  the various continuous steady state loads, after a  battery discharge to the bounding design basis  event discharge state.</p>	<p>In accordance with  the Surveillance  Frequency Control  Program</p>
<p>SR 3.8.4.3      -----NOTES-----</p> <ol style="list-style-type: none"> <li>1.      The modified performance discharge test in                   SR 3.8.6.6 may be performed in lieu of the                   service test in SR 3.8.4.3.</li> <li>2.      This Surveillance shall not normally be                   performed in MODE 1, 2, 3, or 4. However,                   portions of the Surveillance may be                   performed to reestablish OPERABILITY                   provided an assessment determines the                   safety of the plant is maintained or                   enhanced. Credit may be taken for                   unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify battery capacity is adequate to supply, and  maintain in OPERABLE status, the required  emergency loads for the design duty cycle when  subjected to a battery service test.</p>	<p>In accordance with  the Surveillance  Frequency Control  Program</p>

**Southern Nuclear Operating Company  
Vogtle Electric Generating Plant – Units 1 and 2**

**Adoption of TSTF-283-A, Revision 3, "Modify Section 3.8 Mode Restriction Notes"**

**Attachment 3**

**Proposed Technical Specification Bases Changes (Marked-up Pages)  
For Information Only**

## BASES

SURVEILLANCE  
REQUIREMENTSSR 3.8.1.10 (continued)

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1, 2, 3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, or other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or on-site system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, 3, or 4. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. Examples of unplanned events may include:

1. Unexpected operational events which cause the equipment to perform the function specified by this Surveillance, for which adequate documentation of the required performance is available; and
2. Post Corrective maintenance testing that requires performance of this Surveillance in order to restore the component to OPERABLE, provided the maintenance was required, or performed in conjunction with maintenance required to maintain OPERABILITY or reliability.

SR 3.8.1.11

This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time (11.4 seconds) from the design basis actuation signal (LOCA signal) and operates for  $\geq 5$  minutes. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.11.d and SR 3.8.1.11.e ensure

that permanently connected loads and emergency loads are energized from the offsite electrical power system on an ESF signal without loss of offsite power.

The requirement to verify the connection of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential

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(continued)

BASES

SURVEILLANCE  
REQUIREMENTS

SR 3.8.1.11 (continued)

for undesired operation. For instance, ECCS injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or RHR systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1, or 2 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, or other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or on-site system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, or 2. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. Examples of unplanned events may include:

1. Unexpected operational events which cause the equipment to perform the function specified by this Surveillance, for which adequate documentation of the required performance is available; and

(continued)

BASES

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SURVEILLANCE  
REQUIREMENTS

SR 3.8.1.11 (continued)

2. Post Corrective maintenance testing that requires performance of this Surveillance in order to restore the component to OPERABLE, provided the maintenance was required, or performed in conjunction with maintenance required to maintain OPERABILITY or reliability.

SR 3.8.1.12

This Surveillance demonstrates that DG noncritical protective functions (e.g., high jacket water temperature) are bypassed on a loss of voltage signal concurrent with an ESF actuation test signal. The noncritical trips are bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

The SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required DG from service.- This restriction from normally performing the Surveillance in MODE 1, or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, or other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1, or 2. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. Examples of unplanned events may include:

1. Unexpected operational events which cause the equipment to perform the function specified by this Surveillance, for which adequate documentation of the required performance is available; and

(continued)



## BASES

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### SURVEILLANCE REQUIREMENTS

#### SR 3.8.1.14 (continued)

conditions. Momentary transients due to changing bus loads do not invalidate this test. Note 2 allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing.

#### SR 3.8.1.15

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), this Surveillance ensures that the manual synchronization and automatic load transfer from the DG to the offsite source can be made and the DG can be returned to ready to load status when offsite power is restored. It also ensures that the autostart logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs. The DG is considered to be in ready to load status when the DG is at rated speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the load sequence timers are reset.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems.— **This restriction from normally performing the Surveillance in MODE 1, 2, 3, or 4 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, or other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1, 2, 3, or 4. Risk insights or deterministic methods may be used for this assessment.** Credit may be taken for unplanned events that satisfy this SR. Examples of unplanned events may include:

1. Unexpected operational events which cause the equipment to perform the function specified by this Surveillance, for which

adequate documentation of the required performance is available; and

2. Post Corrective maintenance testing that requires performance of this Surveillance in order to restore the component to OPERABLE, provided the maintenance was required, or performed in conjunction with maintenance required to maintain OPERABILITY or reliability.

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## BASES

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### SURVEILLANCE REQUIREMENTS (continued)

#### SR 3.8.1.16

Demonstration of the test mode override ensures that the DG availability under accident conditions will not be compromised as the result of testing and the DG will automatically reset to ready to load operation if a LOCA actuation signal is received during operation in the test mode. Ready to load operation is defined as the DG running at rated speed and voltage with the DG output breaker open. These provisions for automatic switchover are required by IEEE-308 (Ref. 11), paragraph 6.2.6(2).

The requirement to automatically energize the emergency loads with offsite power is essentially identical to that of SR 3.8.1.11. The intent in the requirement associated with SR 3.8.1.16.b is to show that the emergency loading was not affected by the DG operation in test mode. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Surveillance Frequency is controlled by the Surveillance Frequency Control Program.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems.— **This restriction from normally performing the Surveillance in MODE 1, 2, 3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, or other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, 3, or 4. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. Examples of unplanned events may include:**

1. Unexpected operational events which cause the equipment to perform the function specified by this Surveillance, for which

adequate documentation of the required performance is  
available; and

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## BASES

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### SURVEILLANCE REQUIREMENTS

#### SR 3.8.1.16 (continued)

2. Post Corrective maintenance testing that requires performance of this Surveillance in order to restore the component to OPERABLE, provided the maintenance was required, or performed in conjunction with maintenance required to maintain OPERABILITY or reliability.

#### SR 3.8.1.17

Under accident and loss of offsite power conditions, loads are sequentially connected to the bus by the automatic load sequencer. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The 10% load sequence time interval tolerance ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF buses.

The Surveillance Frequency is controlled by the Surveillance Frequency Control Program.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems.— This restriction from normally performing the Surveillance in MODE 1, 2, 3, or 4 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, or other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1, 2, 3, or 4. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. Examples of unplanned events may include:

1. Unexpected operational events which cause the equipment to perform the function specified by this Surveillance, for which adequate documentation of the required performance is available; and

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## BASES

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### SURVEILLANCE REQUIREMENTS

#### SR 3.8.1.17 (continued)

2. Post Corrective maintenance testing that requires performance of this Surveillance in order to restore the component to OPERABLE, provided the maintenance was required, or performed in conjunction with maintenance required to maintain OPERABILITY or reliability.

#### SR 3.8.1.18

In the event of a DBA coincident with a loss of offsite power, the DGs are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded.

This Surveillance demonstrates the DG operation, as discussed in the Bases for SR 3.8.1.10, during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations for DGs. The reason for Note 2 is that the performance of the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems.— This restriction from normally performing the Surveillance in MODE 1, 2, 3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, or other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and

startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, 3, or 4. Risk insights or deterministic methods may be used for this assessment.

Credit may be taken for unplanned events that satisfy this SR.

Examples of unplanned events may include:

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(continued)



## BASES

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### SURVEILLANCE REQUIREMENTS

#### SR 3.8.4.3 (continued)

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test.

The reason for Note 2 is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1, 2, 3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, or other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, 3, or 4. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR. Examples of unplanned events may include:

1. Unexpected operational events which cause the equipment to perform the function specified by this Surveillance, for which adequate documentation of the required performance is available;
2. Post Corrective maintenance testing that requires performance of this Surveillance in order to restore the component to OPERABLE, provided the maintenance was required, or performed in conjunction with maintenance required to maintain OPERABILITY or reliability.

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### REFERENCES

1. IEEE-308-1978.
2. 10 CFR 50, Appendix A, GDC 17.
3. IEEE-485-1983, June 1983.
4. FSAR, Chapter 8.
5. Regulatory Guide 1.32, February 1977.
6. FSAR, Chapter 6.

7. FSAR, Chapter 15.
8. Regulatory Guide 1.93, December 1974.
9. WCAP-16294-NP-A, Rev. 1, “Risk-Informed Evaluation of Changes to Technical Specification Required Action Endstates for Westinghouse NSSS PWRs,” June 2010.

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