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SOUTHERN COMPANY
Energy to Serve Your World℠

June 27, 2001

LCV-1514

Docket Nos. 50-424
50-425

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

Ladies and Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
REQUEST TO REVISE TECHNICAL SPECIFICATIONS
SURVEILLANCE REQUIREMENT 3.8.1.13

In accordance with the requirements of 10 CFR 50.90, Southern Nuclear Operating Company (SNC) proposes to revise the Vogtle Electric Generating Plant (VEGP) Unit 1 and Unit 2 Technical Specifications (TS). Surveillance Requirement (SR) 3.8.1.13 is an endurance and margin test that demonstrates the load carrying capability of the diesel generator (DG) over a period of 24 hours. It is currently performed with a frequency of once every 18 months with a maximum of 22.5 months including the 25% grace period. The proposed change would revise the frequency of SR 3.8.1.13 to once every 24 months with a maximum of 30 months including the 25% grace period. The proposed change would allow SR 3.8.1.13 to be performed following the DG inspection/maintenance, which is performed at 24-month intervals in accordance with manufacturer recommendations. Surveillance Requirement 3.8.1.14 demonstrates that the DG can be restarted from hot conditions, and it too is currently performed with a frequency of once every 18 months. Note 1 to SR 3.8.1.14 requires the SR to be performed within five minutes of shutting down the DG after operating for $\geq$ 2 hours loaded to $\geq$ 6800 kW and $\leq$ 7000 kW. In order to minimize wear and tear on the DG, it is our practice to perform SR 3.8.1.14 following SR 3.8.1.13. Therefore, SNC is requesting that the frequency of SR 3.8.1.14 be revised to 24 months to allow SR 3.8.1.14 to be performed following SR 3.8.1.13.

Over the last ten years or more, the NRC staff has reviewed a number of requests to extend 18-month surveillances to the end of a fuel cycle and some requests for changes in surveillance intervals to accommodate a 24-month fuel cycle. For those licensees contemplating a 24-month fuel cycle, the NRC staff issued Generic Letter 91-04, Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle, to provide guidance for preparing amendment requests to modify surveillance intervals to be compatible with a 24-month fuel cycle. The changes proposed herein are consistent with the

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basis for Generic Letter 91-04. The proposed changes are not required to accommodate a 24-month fuel cycle, but they will accommodate a 24-month maintenance interval for the DGs, and the considerations outlined in Generic Letter 91-04 should be equally applicable.

SNC requests approval of the proposed changes by December 31, 2001. This will facilitate outage planning for the outage that is scheduled for the Spring of 2002.

The proposed changes and their basis are described in Enclosure 1. An evaluation demonstrating that the proposed changes do not involve a significant hazard as defined in 10 CFR 50.92 is provided in Enclosure 2. Marked-up TS and Bases pages are provided in Enclosure 3, and clean-typed pages are provided in Enclosure 4.

Mr. J. B. Beasley, Jr. states that he is a Vice President of Southern Nuclear Operating Company and is authorized to execute this oath on behalf of Southern Nuclear Operating Company and that, to the best of his knowledge and belief, the facts set forth in this letter are true.

SOUTHERN NUCLEAR OPERATING COMPANY

By: _____
J. B. Beasley, Jr.

Sworn to and subscribed before me this 27th *day of* June, *2001.*

_____
Notary Public

My commission expires: 11/10/02

JBB/NJS

Enclosure 1: Basis for Proposed Changes
Enclosure 2: No Significant Hazard Consideration Evaluation
Enclosure 3: Marked-up TS and Bases Pages
Enclosure 4: Clean-typed TS and Bases Pages

cc: Southern Nuclear Operating Company
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U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator
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State of Georgia
Mr. L. C. Barrett, Commissioner, Department of Natural Resources

Enclosure 1

Vogtle Electric Generating Plant
Request to Revise Technical Specifications
Surveillance Requirement 3.8.1.13

Basis for Proposed Change

Proposed Change

The proposed changes would revise the Vogtle Electric Generating Plant (VEGP) Unit 1 and Unit 2 Technical Specifications (TS) Surveillance Requirement (SR) 3.8.1.13 frequency from once every 18 months (with a maximum of 22.5 months including the 25% grace period of SR 3.0.2) to once every 24 months (for a maximum of 30 months including the 25% grace period of SR 3.0.2). The proposed change would allow SR 3.8.1.13 to be performed following the DG inspection/maintenance, which is performed at 24-month intervals in accordance with manufacturer recommendations. Similarly, the frequency of SR 3.8.1.14 would be revised from once every 18 months to once every 24 months. The proposed change would allow SR 3.8.1.14 to be performed following SR 3.8.1.13.

Basis

Surveillance Requirement 3.8.1.13 is an endurance and margin test that demonstrates the load carrying capability of the diesel generator (DG) over a period of 24 hours. The SR is performed by operating the DG for ≥ 2 hours while loaded ≥ 6900 kW and ≤ 7700 kW and operating as close as practicable to 3390 kVAR; and, for the remaining hours of the test, loaded ≥ 6500 kW and ≤ 7000 kW and operating as close as practicable to 3390 kVAR. The original licensing basis for DG surveillance requirements specified in the VEGP TS was Regulatory Guide 1.108, which has since been superceded by Regulatory Guide 1.9, Revision 3, Selection, Design, and Qualification of Diesel-Generator Units Used as Standby (Onsite) Electric Power Systems at Nuclear Power Plants. Regulatory Guide (RG) 1.9 currently calls for the endurance and margin test to be performed at every refueling outage (reference Regulatory Position 2.3.2.3 of RG 1.9). However, the requirement to perform SR 3.8.1.13 during shutdown (i.e., a refueling outage) was removed with Amendments 96 and 74 to the VEGP TS. In their safety evaluation report that accompanied Amendments 96 and 74 dated September 25, 1996, the NRC staff found that it was acceptable to perform SR 3.8.1.13 at power. Therefore, the VEGP TS no longer require the endurance and margin test to be performed during a refueling outage. Note that the loading requirements for the DGs were revised, based on the maximum expected accident loading, with Amendments 109 and 87 and 117 and 95.

In addition, prior to Amendments 96 and 74, the VEGP TS required that each DG be subjected to an inspection in accordance with the manufacturer's recommendations once every 18 months, during shutdown. With Amendments 96 and 74, the requirement to perform the DG inspection was removed from the TS. Inspection of the DGs is now performed in accordance with the manufacturer's recommendations. Then, with Amendments 100 and 78, an extended Completion Time of 14 days to restore an inoperable DG to operable status was incorporated into the VEGP TS. The changes approved with Amendments 96 and 74 and 100 and 78 now allow the DG inspections to be performed during power operation at 24-month intervals.

In the past, when both the DG inspections and the endurance and margin test were performed during a refueling outage, the endurance and margin test has not necessarily been performed in conjunction with the DG inspections. The endurance and margin test is not required to establish DG operability after an inspection, and the performance of the test was based on optimizing the outage schedule. Operability following an inspection is established by performing SRs 3.8.1.2 and 3.8.1.3, both of which are normally performed with a frequency of every 31 days. SR 3.8.1.2 verifies that the DG starts from standby

Basis for Proposed Change

conditions and achieves steady state voltage and frequency, and SR 3.8.1.3 verifies that the DG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ 6500 kW and ≤ 7000 kW. However, now that DG inspections can be performed outside of a refueling outage utilizing the extended Completion Time for restoring an inoperable DG to service, and the schedule for such inspections has been optimized at 24 months, it makes good engineering sense to perform the endurance and margin test following the DG inspection. In addition, the endurance and margin test requires dedicated operations personnel, and, with approval of the proposed change, greater efficiencies can be gained with respect to scheduling the test. Therefore, SNC is requesting that the frequency of SR 3.8.1.13 be extended to 24 months from 18 months.

Surveillance Requirement 3.8.1.14 is the hot restart test recommended by RG 1.9 in Regulatory Position 2.2.10. This test demonstrates the hot restart functional capability of the DG at full-load temperature conditions (after it has operated for two hours at full load) by verifying that the DG starts on a manual or autostart signal, attains the required voltage and frequency within acceptable limits and time, and operates for longer than five minutes. In addition, RG 1.9 states that this test may be performed following the endurance and margin test. Again, this makes good engineering sense because performing the hot restart test following the endurance and margin test helps to minimize wear and tear on the DGs due to testing. Performing the hot restart test at some time other than following the endurance and margin test would require that the DG be operated for an additional 2 hours while loaded in order to ensure that operating temperatures have been established. Therefore, SNC is requesting that the frequency of SR 3.8.1.14 be extended to 24 months from 18 months.

The proposed changes are consistent with the basis for Generic Letter 91-04, Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle. This letter provides guidance to licensees for preparing amendment requests to modify surveillance intervals to be compatible with a 24-month fuel cycle. The proposed changes are not required to accommodate a 24-month fuel cycle, but they will accommodate a 24-month maintenance interval for the DGs, and the considerations outlined in Generic Letter (GL) 91-04 should be equally applicable.

Regarding non-instrumentation changes, GL 91-04 requires licensees to evaluate the effect on safety of the change in surveillance intervals. This evaluation should support a conclusion that the effect on safety is small. In addition, licensees should confirm that the performance of the affected surveillances at the bounding surveillance interval limit would not invalidate any assumption in the plant licensing basis. In consideration of these confirmations, the licensees need not quantify the effect of the change in surveillance intervals on the availability of individual systems or components.

With regard to the proposed changes in surveillance intervals from 18 months to 24 months for SRs 3.8.1.13 and 3.8.1.14, SNC offers the following analysis:

- SRs 3.8.1.2 and 3.8.1.3 require that each DG be tested for operability every 31 days. SR 3.8.1.2 requires that each DG start from standby conditions and achieve steady state voltage and frequency, and SR 3.8.1.3 requires that each DG synchronize with the grid, accept load between 6500 kW and 7000 kW, and operate for at least 60 minutes. These SRs, which are not affected by the proposed changes, will provide prompt identification of any substantial DG degradation or failure.
- SR 3.8.1.7, which is performed every 184 days, requires that each DG start from standby conditions and achieve voltage and frequency within specified ranges in at least 11.4 seconds. This surveillance,

Basis for Proposed Change

which is not affected by the proposed changes, will also provide prompt identification of any substantial DG degradation or failure.

- Attributes of the DGs, which may be subject to degradation due to aging, such as fuel oil quality, are subject to their own requirements for replenishment and testing. These requirements are not affected by the proposed change.
- All other SRs that are performed at 18-month intervals (SRs 3.8.1.8, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.15, 3.8.1.16, 3.8.1.17, 3.8.1.18, and 3.8.1.19) are not affected by the proposed change and will continue to be performed at 18-month intervals.
- Except as required by surveillance testing, the DGs are not operated to minimize wear-related degradation.
- A review of the failures per the last 20, 50, and 100 valid demands for each DG indicates that there were a total of eight failures for the four DGs. In 1995, two of the DGs suffered a voltage regulator failure and the other two DGs suffered a failure of the power-driven potentiometer (part of the voltage regulator). The preventative maintenance program addressed these failures, and no such failures have occurred since. The remaining failures were a fuel oil line break (1998), a turbocharger line break (March 2001), failure of a link pin bushing (January 2000), and failure of a field flash relay (April 2001). The fuel oil line and turbocharger line breaks are clearly not repetitive in nature, and the failure of the link pin bushing is being addressed aggressively via inspection and replacement as necessary. The field flash relay was replaced, and a design change is being implemented to replace this relay with a different type due to obsolescence. In all cases, these failures would be detectable via routine monthly testing or other surveillance testing not affected by the proposed change. Therefore, based on a review of the failure history, the proposed increase in the intervals for SRs 3.8.1.13 and 3.8.1.14 would have a minimal impact on DG availability.
- The above analysis is essentially identical to that which was used in the safety evaluation report for the Perry Nuclear Power Plant, Amendment 115, dated August 29, 2000, which extended a number of TS surveillance intervals, including the DG endurance and margin test, to accommodate a 24-month operating cycle.

Conclusion

The proposed changes are consistent with current regulatory guidance and recent licensing actions regarding the extension of surveillance intervals beyond 18 months. As required by GL 91-04, the above analysis demonstrates that the proposed changes will have a minimal impact on safety. The proposed changes will minimize DG wear and tear due to testing, provide for more meaningful surveillances by allowing the endurance and margin test and hot restart test to be performed following DG inspections, and allow more efficient scheduling.

Enclosure 2

Vogtle Electric Generating Plant
Request to Revise Technical Specifications
Surveillance Requirement 3.8.1.13

Significant Hazard Consideration Evaluation

Proposed Change

The proposed change would revise the Vogtle Electric Generating Plant (VEGP) Unit 1 and Unit 2 Technical Specifications (TS) Surveillance Requirement (SR) 3.8.1.13 frequency from once every 18 months (with a maximum of 22.5 months including the 25% grace period of SR 3.0.2) to once every 24 months (for a maximum of 30 months including the 25% grace period of SR 3.0.2). Similarly, the frequency of SR 3.8.1.14 would be revised from once every 18 months to once every 24 months.

Evaluation

The proposed change has been evaluated against the criteria of 10 CFR 50.92 as follows:

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

   No. The surveillance intervals associated with SRs 3.8.1.13 and 3.8.1.14 have no bearing on the likelihood of any of the initiating events assumed for any of the accidents previously evaluated. Therefore, increasing the intervals for SRs 3.8.1.13 and 3.8.1.14 do not involve a significant increase in the probability of any accident previously evaluated. The operability of the emergency diesel generators (DGs) will continue to be demonstrated by all of the other surveillance requirements associated with TS Limiting Condition for Operation (LCO) 3.8.1 which are not affected by the proposed change. Endurance and margin will continue to be demonstrated by SR 3.8.1.13, and hot restart functional capability will continue to be demonstrated by SR 3.8.1.14. The only difference will be the increased surveillance intervals, which have been shown to have a minimal impact on safety in accordance with Generic Letter 91-04. Therefore, the DGs will remain capable of performing their safety function as assumed in the accident analyses, and the proposed changes do not involve a significant increase in the consequences of any accident previously evaluated.

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

   No. The proposed changes do not introduce any new equipment or create new failure modes for existing equipment. No new limiting single failure is created, and plant operation will not be altered. The DGs will remain capable of performing their safety function as assumed in the safety analyses. No other safety-related or important-to-safety equipment is affected by the proposed changes. Therefore, the proposed changes will not create the possibility of a new or different kind of accident from any previously evaluated.

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

   No. The operability of the emergency diesel generators (DGs) will continue to be demonstrated by all of the other surveillance requirements associated with TS Limiting Condition for Operation (LCO) 3.8.1 which are not affected by the proposed changes. Endurance and margin and hot restart functional capability will continue to be demonstrated by SRs 3.8.1.13 and 3.8.1.14, respectively. The only difference will be the increased intervals, which have been shown to have a minimal impact on safety in accordance with Generic Letter 91-04. The proposed changes are consistent with current

regulatory guidance and licensing actions for increasing TS surveillance intervals to accommodate operating cycles that have been extended to 24 months. Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Conclusion

Based on the above evaluation, the proposed changes do not involve a significant hazard as defined in 10 CFR 50.92.

Enclosure 3

Vogtle Electric Generating Plant
Request to Revise Technical Specifications
Surveillance Requirement 3.8.1.13

Marked-up TS and Bases Pages

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	----------NOTE---------- This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- 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: a. Engine overspeed; b. Generator differential current; and c. Low lube oil pressure;	18 months
SR 3.8.1.13	----------NOTES---------- 1. Momentary transients outside the kW and kVAR load ranges do not invalidate this test. 2. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG operates for ≥ 24 hours while maintaining voltage ≤ 4330 V: a. For ≥ 2 hours loaded ≥ 6900 kW and ≤ 7700 kW and operating as close as practicable to 3390 kVAR; and b. For the remaining hours of the test loaded ≥ 6500 kW and ≤ 7000 kW and operating as close as practicable to 3390 kVAR.	*24* ~~18~~ months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 2 hours loaded ≥ 6500 kW and ≤ 7000 kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts and achieves, in ≤ 11.4 seconds, voltage ≥ 4025 V, and ≤ 4330 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	~~24~~18 months
SR 3.8.1.15	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation.	18 months

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.12 (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 3.8.1.13

This Surveillance Requirement demonstrates that the DGs can start and run continuously at loads in excess of the maximum expected loading for an interval of not less than 24 hours, ≥ 2 hours of which is at a load equivalent to ≥ 105% of the maximum expected loading and the remainder of the time at a load equivalent to the maximum expected loading of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelubricating and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a kVAR load as close as practicable to 3390 kVAR while loaded ≥ 6500 kW and maintaining voltage ≤ 4330 V. This kVAR load is chosen to be representative of the actual design basis inductive loading that the DG would experience. The voltage limit of 4330 V is required to prevent operation of any loads at or above the maximum design voltage. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

The *2418* month Frequency ~~is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.~~*allows SR 3.8.1.13 to be scheduled following a teardown inspection. The teardown inspections are performed at 24 month intervals in accordance with manufacturer recommendations. The 24 month Frequency is consistent with the regulatory guidance of Generic Letter 91-04 (Ref. 12).*

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.13 (continued)

This Surveillance is modified by two Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary kVAR load transients above the limit will not invalidate the test. Note 2 acknowledges that credit may be taken for unplanned events that satisfy this SR. Examples of unplanned events may include:

1. ~~U~~*u*nexpected 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 3.8.1.14

This Surveillance 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 11.4 seconds. The 11.4 second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. The *24*~~18~~ month Frequency ~~is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5).~~*allows SR 3.8.1.14 to be performed following SR 3.8.1.13, thereby minimizing wear and tear on the diesel engine due to testing. The 24 month Frequency is consistent with the regulatory guidance of Generic Letter 91-04 (Ref. 12).*

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least 2 hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.20 (continued)

This SR is modified by a Note. The reason for the Note is to minimize wear on the DG 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.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.
2. FSAR, Chapter 8.
3. Regulatory Guide 1.9, Rev. 3, July 1993.
4. FSAR, Chapter 6.
5. FSAR, Chapter 15.
6. Regulatory Guide 1.93, Rev. 0, December 1974.
7. Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," July 2, 1984.
8. 10 CFR 50, Appendix A, GDC 18.
9. Regulatory Guide 1.108, Rev. 1, August 1977.
10. Regulatory Guide 1.137, Rev. 1, October 1979.
11. IEEE Standard 308-1978.
12. *Generic Letter 91-04, "Changes in Technical Specification Intervals to Accommodate a 24-Month Fuel Cycle," April 2, 1991.*

Enclosure 4

Vogtle Electric Generating Plant
Request to Revise Technical Specifications
Surveillance Requirement 3.8.1.13

Clean-typed TS and Bases Pages

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	----------NOTE---------- This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. ---------- 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: a. Engine overspeed; b. Generator differential current; and c. Low lube oil pressure;	18 months
SR 3.8.1.13	----------NOTES---------- 1. Momentary transients outside the kW and kVAR load ranges do not invalidate this test. 2. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG operates for ≥ 24 hours while maintaining voltage ≤ 4330 V: a. For ≥ 2 hours loaded ≥ 6900 kW and ≤ 7700 kW and operating as close as practicable to 3390 kVAR; and b. For the remaining hours of the test loaded ≥ 6500 kW and ≤ 7000 kW and operating as close as practicable to 3390 kVAR.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	----------NOTES---------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 2 hours loaded ≥ 6500 kW and ≤ 7000 kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---------- Verify each DG starts and achieves, in ≤ 11.4 seconds, voltage ≥ 4025 V, and ≤ 4330 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	24 months
SR 3.8.1.15	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation.	18 months

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.12 (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 3.8.1.13

This Surveillance Requirement demonstrates that the DGs can start and run continuously at loads in excess of the maximum expected loading for an interval of not less than 24 hours, ≥ 2 hours of which is at a load equivalent to ≥ 105% of the maximum expected loading and the remainder of the time at a load equivalent to the maximum expected loading of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelubricating and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a kVAR load as close as practicable to 3390 kVAR while loaded ≥ 6500 kW and maintaining voltage ≤ 4330 V. This kVAR load is chosen to be representative of the actual design basis inductive loading that the DG would experience. The voltage limit of 4330 V is required to prevent operation of any loads at or above the maximum design voltage. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

The 24 month Frequency allows SR 3.8.1.13 to be scheduled following a teardown inspection. The teardown inspections are performed at 24 month intervals in accordance with manufacturer recommendations. The 24 month Frequency is consistent with the regulatory guidance of Generic Letter 91-04 (Ref. 12).

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.13 (continued)

This Surveillance is modified by two Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary kVAR load transients above the limit will not invalidate the test. Note 2 acknowledges that credit may be taken for unplanned events that satisfy this SR. Examples of unplanned events may include 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.

SR 3.8.1.14

This Surveillance 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 11.4 seconds. The 11.4 second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. The 24 month Frequency allows SR 3.8.1.14 to be performed following SR 3.8.1.13, thereby minimizing wear and tear on the diesel engine due to testing. The 24 month Frequency is consistent with the regulatory guidance of Generic Letter 91-04 (Ref. 12).

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least 2 hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.20 (continued)

This SR is modified by a Note. The reason for the Note is to minimize wear on the DG 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.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.
2. FSAR, Chapter 8.
3. Regulatory Guide 1.9, Rev. 3, July 1993.
4. FSAR, Chapter 6.
5. FSAR, Chapter 15.
6. Regulatory Guide 1.93, Rev. 0, December 1974.
7. Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," July 2, 1984.
8. 10 CFR 50, Appendix A, GDC 18.
9. Regulatory Guide 1.108, Rev. 1, August 1977.
10. Regulatory Guide 1.137, Rev. 1, October 1979.
11. IEEE Standard 308-1978.
12. Generic Letter 91-04, "Changes in Technical Specification Intervals to Accommodate a 24-Month Fuel Cycle," April 2, 1991.