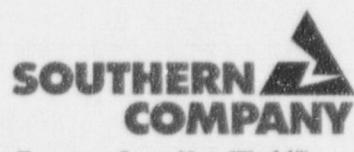


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May 18, 1999

LCV-1329

Docket Nos. 50-424
 50-425

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

Ladies and Gentlemen:

**VOGTL ELECTRIC GENERATING PLANT
REQUEST TO REVISE TECHNICAL SPECIFICATIONS
DIESEL GENERATOR LOADING REQUIREMENTS
SURVEILLANCE REQUIREMENTS 3.8.1.3 AND 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). The proposed change would revise Surveillance Requirements (SRs) 3.8.1.3 and 3.8.1.13 to reduce the loading requirements for the diesel generators. Presently, SR 3.8.1.3 requires that the DGs be loaded and operated for ≥ 60 minutes at a load ≥ 6800 kW and ≤ 7000 kW at least once every 31 days. The proposed change would revise the lower end of the load band in SR 3.8.1.3 to 6500 kW from 6800 kW. Revised SR 3.8.1.3 would require that the DGs be loaded and operated for ≥ 60 minutes at a load ≥ 6500 kW and ≤ 7000 kW at least once every 31 days.

Presently, SR 3.8.1.13 requires, in part, that the DGs be operated for ≥ 2 hours while loaded ≥ 7600 kW and ≤ 7700 kW and operating as close as practical to 3730 kVAR. For the remaining hours of the test the DGs are to be loaded ≥ 6800 kW and ≤ 7000 kW and operated as close as practicable to 3390 kVAR. The proposed change would revise the loading requirements of SR 3.8.1.13 such that for two or more hours of the test the DGs would be loaded ≥ 6900 kW and operated as close as practicable to 3390 kVAR. For the remaining hours of the test, the DGs would be loaded ≥ 6500 kW and ≤ 7000 kW and operated as close as practicable to 3390 kVAR. Appropriate changes to the associated Bases are included.

In general, the basis for the proposed change is to reduce wear and tear on the DGs as a result of the operating conditions required by existing SRs 3.8.1.3 and 3.8.1.13. The new loading requirements will result in reduced wear and tear due to testing, thereby prolonging the life of the DGs and inherently improving reliability. However, the new loading requirements exceed the maximum expected loading on the DGs. Therefore, the proposed change will continue to demonstrate that the DGs are capable of performing their safety function under

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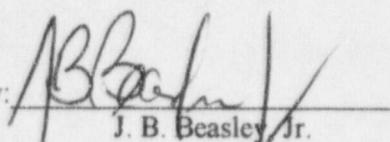
worst case conditions, while reducing wear and tear due to testing.

The basis for the proposed change is provided in Enclosure 1. Pursuant to 10 CFR 50.92, an evaluation that demonstrates that the proposed change does not involve a significant hazard consideration is provided in Enclosure 2. The proposed change is marked on the affected TS and Bases pages provided in Enclosure 3. In addition, clean typed TS and Bases pages are provided in Enclosure 4.

SNC requests approval of the proposed change by September 30, 1999, to facilitate the performance of SR 3.8.1.13 using the revised loading requirements.

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 17th day of May, 1999.

Glenor C. Spinks
Notary Public

My commission expires: 11/10/02

JBB/NJS

Enclosure 1 - Basis for Proposed Changes
Enclosure 2 - Significant Hazards Consideration Evaluation
Enclosure 3 - Marked-up TS and Bases Pages
Enclosure 4 - Clean Typed TS and Bases Pages

xc: Southern Nuclear Operating Company
Mr. J. T. Gasser
Mr. M. Sheibani
NORMS

U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator
Mr. R. R. Assa, Project Manager, NRR

U. S. Nuclear Regulatory Commission

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Page 3

Mr. John Zeiler, Senior Resident Inspector, Vogtle

State of Georgia

Mr. L. C. Barrett, Commissioner, Department of Natural Resources

Enclosure 1

**Vogtle Electric Generating Plant
Request to Revise Technical Specifications
Diesel Generator Loading Requirements
Surveillance Requirements 3.8.1.3 And 3.8.1.13**

Basis for Proposed Change

Proposed Change

The proposed change would revise Surveillance Requirements (SRs) 3.8.1.3 and 3.8.1.13 to reduce the loading requirements for the diesel generators. Presently, SR 3.8.1.3 requires that the DGs be loaded and operated for \geq 60 minutes at a load \geq 6800 kW and \leq 7000 kW at least once every 31 days. The proposed change would revise the lower end of the load band in SR 3.8.1.3 to 6500 kW from 6800 kW. Revised SR 3.8.1.3 would require that the DGs be loaded and operated for \geq 60 minutes at a load \geq 6500 kW and \leq 7000 kW at least once every 31 days.

Presently, SR 3.8.1.13 requires, in part, that the DGs be operated for \geq 2 hours while loaded \geq 7600 kW and \leq 7700 kW and operating as close as practical to 3730 kVAR. For the remaining hours of the test the DGs are to be loaded \geq 6800 kW and \leq 7000 kW and operated as close as practicable to 3390 kVAR. The proposed change would revise the loading requirements of SR 3.8.1.13 such that for two or more hours the DGs would be loaded \geq 6900 kW and operated as close as practicable to 3390 kVAR. For the remaining hours of the test, the DGs would be loaded \geq 6500 kW and \leq 7000 kW and operated as close as practicable to 3390 kVAR. Appropriate changes to the associated Bases are included.

Basis

The present surveillance requirements were based on 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 Regulatory Guide (RG) was in effect at the time that the Unit 1 and Unit 2 operating licenses were issued. Regulatory Position C.2.a.(3) of RG 1.108 calls for demonstrating full-load carrying capability for an interval of not less than 24 hours, of which 22 hours should be at a load equivalent to the continuous rating of the diesel generator and 2 hours at a load equivalent to the 2-hour rating of the diesel generator. This testing should be performed during the preoperational test program and at least once every 18 months. Regulatory Position C.2.c.(2) of RG 1.108 calls for demonstrating full-load-carrying capability (continuous rating) for an interval of not less than one hour and the interval (Regulatory Position C.2.d) should be no more than 31 days. The VEGP DGs are rated at 7000 kW for continuous operation and 7700 kW for a short-term period (2 hours).

Therefore, consistent with Regulatory Position C.2.a.(3), existing SR 3.8.1.13 requires each DG to be operated at a load between 7600 kW and 7700 kW for at least the first two hours of the test and between 6800 kW and 7000 kW for the remainder of the 24 hours at least every 18 months. The load band is provided to prevent overloading the DG in an attempt to maintain compliance with the SR. Consistent with Regulatory Position C.2.c.(2), existing SR 3.8.1.3 requires each DG to be operated at a load between 6800 kW and 7000 kW for at least 60 minutes once every 31 days.

Subsequent to the VEGP Unit 1 and Unit 2 Operating Licenses, pertinent guidance from RG 1.108 was integrated into Revision 3 (July 1993) to RG 1.9, "Selection, Design, and Qualification of Diesel-Generator Units Used as Standby (Onsite) Electric Power Systems at Nuclear Power

Enclosure 1

**Vogtle Electric Generating Plant
Request to Revise Technical Specifications
Diesel Generator Loading Requirements
Surveillance Requirements 3.8.1.3 And 3.8.1.13**

Basis for Proposed Change

Plants." Item 2.2.2, Load-Run Test, of RG 1.9 calls for demonstrating 90 to 100 percent of the continuous rating of the emergency diesel generator for an interval of not less than 1 hour, and Table 1 of RG 1.9 specifies a monthly test. Item 2.2.9, Endurance and Margin Test, calls for demonstrating full-load carrying capability at a power factor between 0.8 and 0.9 for an interval of not less than 24 hours, of which 2 hours are at a load equal to 105 to 110 percent of the continuous rating of the emergency diesel generator and 22 hours are at a load equal to 90 to 100 percent of its continuous rating. Table 1 of RG 1.9 specifies that the Endurance and Margin Test are to be performed at refueling outage intervals.

As part of the conversion to the Improved Standard Technical Specifications (NUREG-1431), SNC adopted the power factor requirement of RG 1.9, Item 2.2.9. This appears in SR 3.8.1.13 as 3390 kVAR for the load band of 6800 kW to 7000 kW and 3730 kVAR for the load band of 7600 kW to 7700 kW. There is no power factor requirement for Item 2.2.2 of RG 1.9. At 6800 kW and 3390 kVAR, the power factor is 0.89, and at 7000 kW and 3390 kVAR, the power factor is 0.90. At 7600 kW and 3730 kVAR, the power factor is 0.898 and at 7700 kW, and 3730 kVAR, the power factor is 0.90. Therefore, the existing VEGP SRs 3.8.1.3 and 3.8.1.13 represent the more restrictive loading requirements of RG 1.108 and the power factor requirements of RG 1.9, Revision 3.

Many of the accidents evaluated in the safety analyses are made more severe by assuming a loss of offsite power in conjunction with the accident. In addition, the safety analyses evaluate plant response to a loss of offsite power only. The emergency DGs are crucial pieces of safety related equipment necessary to respond to these postulated events. In response to vendor concerns regarding TS required testing based on the continuous duty rating of the DGs, SNC initiated a review of the maximum expected loading for the DGs. The maximum expected DG loading for VEGP was determined to be 6471 kW and 3391 kVAR, or 7306 kVA at 0.886 power factor. This review was based, in part, on conservative assumptions such as the following:

- The worst-case scenario for DG loading at VEGP is a loss of offsite power. During a LOSP, the non-1E buses that provide power to the pressurizer heaters are initially shed from the 1E buses and then automatically sequenced back onto the 1E buses. On a safety injection signal, these non-1E buses are not automatically loaded onto the 1E buses.
- For transformers that are not fully loaded, the connected load was increased 10-20 percent to account for future load growth.
- Full-load values (or any actual overloaded scenarios) were assumed for all motors.
- All DC distribution panels were assumed to be fully loaded with no load diversity.
- The total worst-case load on the DC distribution panels is actually only approximately 62 percent of the nameplate rating for one battery charger. For the purpose of this evaluation, two chargers were assumed to be operating, both at 50 percent of their nameplate loading. This results in the equivalent of one charger operating at 100 percent

Enclosure 1

Vogtle Electric Generating Plant Request to Revise Technical Specifications Diesel Generator Loading Requirements Surveillance Requirements 3.8.1.3 And 3.8.1.13

Basis for Proposed Change

of its nameplate loading. Since the total worst-case load was determined to be only approximately 62 percent of nameplate loading, this assumption is very conservative.

Therefore, based on the above evaluation, it would be conservative, with respect to the maximum expected load, to test the DGs on a monthly basis loaded at ≥ 6500 kW and ≤ 7000 kW. This load band is also consistent with the recommendations of RG 1.9, Item 2.2.2, Load-Run Test that calls for testing at loads 90 to 100 percent of the continuous rating. For the VEGP DGs, this would correspond to a load band of 6300 kW to 7000 kW. Therefore the proposed change to the load band for SR 3.8.1.3 bounds the maximum expected load and is consistent with the guidance of RG 1.9, Revision 3.

Item 2.2.9 of RG 1.9, Revision 3 calls for testing for 2 hours at loads of 105 to 110 percent of the continuous duty rating for the DG. For the VEGP DGs, this would correspond to 7350 kW to 7700 kW. However, while the DG is capable of maintaining loads in the range of 7600 kW to 7700 kW for short periods (i.e., 2 hours), instances of increased cylinder head and turbocharger wear and tear have been attributed by the vendor to operation at these loads. In fact, the vendor has recommended that SNC pursue reduced loading requirements for testing. Therefore, SNC is proposing to operate the DGs for ≥ 2 hours (pursuant to SR 3.8.1.13) at loads that are equivalent to or greater than 105 percent of 6500 kW, which, in turn, exceeds 105% of the maximum expected load (i.e., 105% of 6500 kW ≥ 6900 kW). The power factor at which the DGs would be operated would be equivalent to 3390 kVAR, or 0.898 at 6900 kW. This would represent an exception to the original licensing basis of RG 1.108 and its replacement, RG 1.9, Revision 3. However, it would continue to demonstrate adequate endurance and margin while having the desirable effect of reducing wear and tear – thereby inherently increasing emergency DG reliability. The proposed load band for the remaining 22 hours of SR 3.8.1.13 is consistent with the guidance of RG 1.9, Revision 3.

Conclusion

The proposed load bands for SRs 3.8.1.3 and 3.8.1.13 represent an exception to the original licensing basis commitment to RG 1.108. However, with the exception of the 2-hour load band proposed for SR 3.8.1.13, they are consistent with the guidance of RG 1.9, Revision 3, which has replaced RG 1.108. The one exception to RG 1.9, Revision 3 will continue to ensure adequate endurance and margin for the VEGP DGs while reducing maintenance caused by test conditions. Therefore, the proposed changes are consistent with the safety design basis of the VEGP onsite standby power supplies.

Enclosure 2

**Vogtle Electric Generating Plant
Request to Revise Technical Specifications
Diesel Generator Loading Requirements
Surveillance Requirements 3.8.1.3 And 3.8.1.13**

Significant Hazard Consideration Evaluation

Proposed Change

The proposed change would revise Surveillance Requirements (SRs) 3.8.1.3 and 3.8.1.13 to reduce the loading requirements for the diesel generators. Presently, SR 3.8.1.3 requires that the DGs be loaded and operated for \geq 60 minutes at a load \geq 6800 kW and \leq 7000 kW at least once every 31 days. The proposed change would revise the lower end of the load band in SR 3.8.1.3 to 6500 kW from 6800 kW. Revised SR 3.8.1.3 would require that the DGs be loaded and operated for \geq 60 minutes at a load \geq 6500 kW and \leq 7000 kW at least once every 31 days.

Presently, SR 3.8.1.13 requires, in part, that the DGs be operated for \geq 2 hours while loaded \geq 7600 kW and \leq 7700 kW and operating as close as practical to 3730 kVAR. For the remaining hours of the test the DGs are to be loaded \geq 6800 kW and \leq 7000 kW and operated as close as practicable to 3390 kVAR. The proposed change would revise the loading requirements of SR 3.8.1.13 such that for two or more hours the DGs would be loaded \geq 6900 kW and operated as close as practicable to 3390 kVAR. For the remaining hours of the test, the DGs would be loaded \geq 6500 kW and \leq 7000 kW and operated as close as practicable to 3390 kVAR.

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 proposed change affects only the DG loading requirements (kW and kVAR) specified in SRs 3.8.1.3 and 3.8.1.13. These loading requirements have no impact on or relationship to the probability of any of the initiating events assumed for the accidents previously evaluated. Therefore, the proposed change does not involve a significant increase in the probability of any accident previously evaluated. Furthermore, since the proposed loading requirements bound the maximum expected loading for the DGs, SRs 3.8.1.3 and 3.8.1.13 will continue to demonstrate that the DGs are capable of performing their safety function. Since the proposed change does not adversely affect the capability of the DGs to perform their safety function, the outcomes of the accidents previously evaluated (i.e., radiological consequences) will not be affected. Therefore, the proposed change does 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 change affects only the DG loading requirements (kW and kVAR) specified in SRs 3.8.1.3 and 3.8.1.13. The proposed change will not introduce any new equipment or create new failure modes for existing equipment. Other than the reduced loading requirements for the DGs, the proposed change will not affect or otherwise alter plant operation. The DGs will remain capable of performing their safety function. No other safety

Enclosure 2

**Vogtle Electric Generating Plant
Request to Revise Technical Specifications
Diesel Generator Loading Requirements
Surveillance Requirements 3.8.1.3 And 3.8.1.13**

Significant Hazard Consideration Evaluation

related or important to safety equipment will be affected by the proposed change. Therefore, the proposed change 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 proposed change reduces the loading requirements of SRs 3.8.1.3 and 3.8.1.13. With one exception, the new loading requirements are consistent with the latest regulatory guidance found in Regulatory Guide (RG) 1.9, Revision 3, "Selection, Design, and Qualification of Diesel-Generator Units Used as Standby (Onsite) Electric Power Systems at Nuclear Power Plants," July 1993. The one exception to RG 1.9, the loading requirements for the 2-hour portion of the endurance and margin test (SR 3.8.1.13), will require testing at loads in excess of 105 percent of the maximum expected load as opposed to 105 percent of the continuous duty rating. Testing for at least 2 hours at 105 percent of the maximum expected load will continue to demonstrate adequate margin, and it will reduce wear and tear on the DGs due to testing. Reduction in wear and tear should inherently increase the reliability of the DGs. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Conclusion

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