



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

July 15, 1996

Mr. C. Randy Hutchinson  
Vice President, Operations GGNS  
Entergy Operations, Inc.  
P. O. Box 756  
Port Gibson, MS 39150

**SUBJECT: ISSUANCE OF AMENDMENT NO.124 TO FACILITY OPERATING LICENSE  
NO. NPF-29 - GRAND GULF NUCLEAR STATION, UNIT 1 (TAC NO. M95225)**

Dear Mr. Hutchinson:

The Nuclear Regulatory Commission has issued the enclosed Amendment No.124 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment revises the Technical Specifications (TSs) in response to your application dated April 18, 1996.

The amendment deletes a restriction on the 24-hour emergency diesel generator (EDG) operation test in Surveillance Requirement 3.8.1.14, AC Sources-Operating, of the TSs for the Grand Gulf Nuclear Station, Unit 1. The deletion allows the 24-hour test to also be conducted during power operation (i.e., during Modes 1 and 2), instead of the current requirement to only conduct the test when the plant is shut down.

In your application, you committed to the following plant operational limitations to be in effect, in appropriate procedures, when conducting the 24-hour test during Modes 1 and 2:

- Only one EDG will be tested in parallel to the offsite grid in accordance with SR 3.8.1.14 at a time.
- Appropriate precautions/limitations will be provided that cautions against conducting the 24-hour test during periods of severe weather, unstable offsite grid conditions or maintenance and test conditions that have an adverse effect on the test.
- No additional maintenance or testing will be performed or planned to be performed on required safety systems, subsystems, trains, components and devices that depend on the remaining EDGs as sources of emergency power.

You are requested to inform the staff when these operational limitations have been implemented in the appropriate plant procedures.

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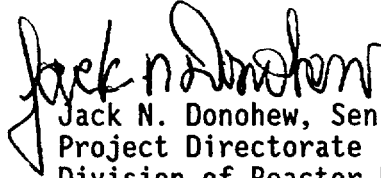
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Mr. C. Randy Hutchinson

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A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,



Jack N. Donohew, Senior Project Manager  
Project Directorate IV-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosures: 1. Amendment No.124 to NPF-29  
2. Safety Evaluation

cc w/encs: See next page

Mr. C. Randy Hutchinson  
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Grand Gulf Nuclear Station

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Mr. C. Randy Hutchinson

-2-

July 15, 1996

A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

Orig. signed by  
*[Handwritten Signature]*

Jack N. Donohew, Senior Project Manager  
Project Directorate IV-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-416

- Enclosures: 1. Amendment No.124 to NPF-29
- 2. Safety Evaluation

cc w/encls: See next page

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Docket File	PUBLIC	PD4-1 r/f	JDonohew
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Document Name: GG95225.AMD

OFC	LA:PD4-1	PM:PD4-1	BC:EELB/DSSA	OGC
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DATE	6/18/96	6/21/96	6/27/96	7/1/96
COPY	(YES)NO	YES/NO	YES/NO	YES/NO

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

ENERGY OPERATIONS, INC.

SYSTEM ENERGY RESOURCES, INC.

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

MISSISSIPPI POWER AND LIGHT COMPANY

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 124  
License No. NPF-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Entergy Operations, Inc. (the licensee) dated April 18, 1996, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. NPF-29 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 124, are hereby incorporated into this license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Jack N. Donohew, Senior Project Manager  
Project Directorate IV-1  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: July 15, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 124

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by amendment number and contains a vertical line indicating the area of change.

REMOVE PAGE

3.8-12

INSERT PAGE

3.8-12

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.14 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. Momentary transients outside the load and power factor ranges do not invalidate this test.</li> <li>2. Credit may be taken for unplanned events that satisfy this SR.</li> </ol> <p>-----</p> <p>Verify each DG operating at a power factor <math>\leq 0.9</math> operates for <math>\geq 24</math> hours:</p> <ol style="list-style-type: none"> <li>a. For DG 11 and DG 12 loaded <math>\geq 5450</math> kW and <math>\leq 5740</math> kW; and</li> <li>b. For DG 13:               <ol style="list-style-type: none"> <li>1. For <math>\geq 2</math> hours loaded <math>\geq 3630</math> kW, and</li> <li>2. For the remaining hours of the test loaded <math>\geq 3300</math> kW.</li> </ol> </li> </ol>	<p>18 months</p>

(continued)





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 124 TO FACILITY OPERATING LICENSE NO. NPF-29

ENTERGY OPERATIONS, INC., ET AL.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By letter dated April 18, 1996, Entergy Operations, Inc. (the licensee) submitted a request for a change to the Technical Specifications (TSs) for Grand Gulf Nuclear Station, Unit 1 (GGNS). The proposed license amendment would delete a restriction on the 24-hour emergency diesel generator (EDG) operation test in Note 2 of Surveillance Requirement (SR) 3.8.1.14, AC Sources-Operating, of the TSs. The deletion would allow the 24-hour test to be conducted during power operation (i.e., during Modes 1 and 2). This would be instead of the current requirement in SR 3.8.1.14 to only conduct the test when the plant is shut down (i.e., only when the plant is not in either Mode 1 or Mode 2). In the application dated April 18, 1996, the licensee also submitted changes to the Bases of the TSs for SR 3.8.1.14.

2.0 BACKGROUND

In its application dated April 18, 1996, the licensee described the Class 1E alternating current (AC) electrical power distribution system (ACPDS), which includes the EDGs, at GGNS. This system is also discussed in Chapter 8 of the Updated Final Safety Analysis Report (UFSAR) for GGNS. The following description of the ACPDS is taken from the application and the UFSAR.

The ACPDS consists of offsite power sources (three incoming lines) and onsite power sources (three EDGs). The UFSAR Chapter 8 states that the GGNS switchyard accommodates three 500 kv and one 115 kv incoming lines to the site; however, one 500 kv line terminates at the Ray Braswell substation and does not connect to the plant site. As required by General Design Criteria (GDC) 17, in Appendix A to 10 CFR Part 50, the ACPDS design provides independence and redundancy to ensure a source of power for the Engineered Safety Feature (ESF) systems.

The ACPDS supplies power to the three divisional ESF load groups (i.e., Divisions I, II and III), with each division powered by an independent Class 1E 4.16 kv ESF bus. Each ESF bus receives power from either offsite power sources or a dedicated onsite EDG. During normal operations, the ESF buses are aligned to their preferred offsite power sources.

Offsite power is supplied by either two 500 kv lines or one 115 kv line. [The third 500 kv line discussed in the UFSAR terminates at the Ray Braswell substation and is not available to provide offsite power to the site.] From the switchyard, three electrically and physically separated circuits provide AC power to each ESF bus. The offsite AC power sources are designed and located to minimize the likelihood of their simultaneous failure under operating and postulated accident conditions. The offsite power system is described in UFSAR Section 8.2.

In the event that the preferred offsite power source for each ESF bus is lost or degrades, the affected ESF bus is automatically transferred to an EDG. These EDG's (i.e., one each for ESF Divisions I, II and III) will automatically start following the generation of either a loss of coolant accident (LOCA) signal or a loss of the offsite power (LOOP) source for the ESF bus (i.e., an ESF bus degraded or undervoltage signal, as specified in TS Table 3.3.8.1-1 for LOOP instrumentation).

The ESF Division I, II, and III loads are given in UFSAR Tables 8.3-1 through 8.3-3, respectively. As explained in UFSAR Sections 6.3.1.1.2 (emergency core cooling system requirements) and 8.3.1.2.1 (EDG compliance), and in Section 8.3, Onsite Power Systems, in the Safety Evaluation of the Grand Gulf Nuclear Station, NUREG-0831 dated September 1981, any two of the three divisions can supply sufficient power to cope with a design basis accident or safely shut down the unit.

The automatic transfer of each ESF bus from the offsite power source to its standby EDG is initiated only after generation of a bus degraded or undervoltage signal as measured on the ESF bus. The transfer is done by first opening the incoming offsite feeder breakers and subsequently closing the EDG feeder breaker when the generator has reached rated speed and voltage. This arrangement reduces the likelihood that the offsite and onsite power sources would remain paralleled during periods of degraded grid conditions.

Having the offsite and onsite power sources in parallel mode or operation is having both power sources in phase and connected to the same bus. This is not done for extensive periods of time; however, it is done during tests of the EDG to provide loads to the diesel generator without removing the bus from its preferred offsite power source.

For Divisions I and II, prior to automatically connecting the EDG to the ESF bus (i.e., closing EDG output breaker), the breakers connecting the ESF buses to the offsite power sources are opened and all bus loads except the ESF 480 volt load center feeders are stripped from the ESF buses. The same signal that initiates the tripping of the offsite feeder breakers also causes all loads to be stripped from the bus. Loads are then sequenced back onto the bus following closure of the EDG output breaker to the ESF bus, in a predetermined

sequence in order to prevent overloading the EDG. Load shedding from and sequencing back on the ESF buses for Divisions I and II are discussed in UFSAR Section 8.3.1.1.3.

Division III loads, including high pressure core spray (HPCS), are not shed from the ESF bus and thus do not have to be sequenced back onto the bus. However, the design of the HPCS system ensures that the offsite and onsite power sources will not continue to operate in a parallel mode following receipt of either a LOCA or LOOP signal. If in parallel operation prior to the occurrence of a LOCA signal, the HPCS EDG output breaker will trip open and not be automatically reclosed unless the preferred offsite power source is not available, similar to the Division I and II designs. Following the receipt of a LOOP signal, the offsite feeder breakers will trip open.

SR 3.8.1.14 requires that the operability of each EDG be demonstrated every 18 months by operating each EDG for 24 hours at specific load conditions. In order to achieve the required load conditions, the selected EDG is operated in parallel with the offsite power sources. Because of the perceived vulnerability that exists while paralleled to an offsite power source, the Note 2 for SR 3.8.1.14 does not allow these tests to be performed while the unit is in Mode 1 or 2. The concern expressed in Information Notice (IN) 84-69 is that a possible fault on the offsite system could cause lockout of the ESF bus or trip the EDG itself. In such a case, the ability of the unit to respond to an emergency could be reduced.

The TS Bases for Note 2 is stated as being a concern for potentially tripping the plant if the surveillance were performed during Modes 1 and 2. The licensee stated that while performance of this surveillance could present a potential challenge to the continued operation of the unit, it does not present a greater challenge than that presented by other surveillances on the EDGs which are performed on a more frequent basis (e.g., SR 3.8.1.3 which requires the verification at least once a month that a EDG operates at load for more than an hour).

The licensee stated that the decision of whether to perform SR 3.8.1.14 during power operation should be made just as with any other surveillance that presents a potential trip of the unit. It is the licensee's opinion that the more important concerns with SR 3.8.1.14 being done in Modes 1 or 2 are those expressed in IN 84-69 and not whether performance of the surveillance represents a challenge to continued steady state operation of the unit.

To meet the single failure criteria, only two of the ESF divisions/EDGs are needed to supply power to cope with a design basis accident or safely shut down the unit.

### 3.0 EVALUATION

The proposed change to the GGNS TSs is to delete the restriction in Note 2, to SR 3.8.1.14, which does not allow the performance of the 24-hour EDG running loaded test while the unit is in either Mode 1 or 2. The proposed change would allow the test to be performed during any mode of operation (i.e.,

Modes 1, 2, 3, 4, or 5) and would provide the licensee with more flexibility in scheduling and running this test.

The second part of Note 2 would remain in effect and state that credit could be taken for unplanned EDG running events to satisfy SR 3.8.1.14. Also Note 1 for this SR, that momentary transients outside the load and power factor ranges do not invalidate this test, is not affected by this proposed change.

The staff has expressed concern about the performance of the 24-hour test while paralleled to the offsite power system with the unit at power. This concern is based on the vulnerability of the offsite and onsite power sources during the duration of the 24-hour test and led to restrictions in plant TSS that the test would be conducted when the reactor was shutdown (i.e., in Modes 3, 4, or 5). The GGNS TSS has this restriction in Note 2 of SR 3.8.1.14.

The staff's concern was that the availability of the EDG for subsequent emergency operation could be adversely affected if a fault or grid disturbance occurred while the EDG was in parallel with a offsite power source during the 24-hour test. The EDG, or its generator breaker, could trip and thus local operator action may be required to restore the EDG to the ESF bus. In these instances, the response of the ESF systems could be slower than was assumed in the supporting accident analyses for the plant.

The staff has, however, approved requests by other licensees for eliminating the Mode 1 and 2 restrictions when performing the 24-hour test. These approvals were based on unique EDG design features and/or special provisions which ensured that paralleled operation of the EDG with an offsite power source will not prevent the EDG from performing its safety functions when it is needed.

The EDG response to accidents is in terms of the LOCA and LOOP signals; the only signals which start the EDGs. The response of a paralleled EDG to a LOCA signal, a LOOP signal, and coincident LOCA and LOOP signals is discussed below for GGNS.

### 3.1 Response to LOCA Signal

The first action after generation of a LOCA signal is the shedding of all loads, except feeders to the 480-volt load centers, off the ESF buses (Divisions I and II only). Loads are sequenced back onto the ESF bus once appropriate bus voltage and frequency is confirmed. The timing of the sequencing is the same regardless of whether the ESF buses are energized from offsite or onsite power sources. This makes the LOCA load sequencing on an ESF bus a function solely of when the ESF bus voltage becomes available.

Regardless of whether the EDGs are in parallel operation or in its normal standby mode, the generation of a LOCA signal is also an emergency start signal for all three of the EDGs. In either case (i.e., paralleled or normal standby mode), an emergency start signal automatically bypasses selected EDG trips. For Divisions I and II, a LOCA signal retains only three EDG trips active (i.e., engine overspeed, generator differential and low lube oil

pressure) and, for Division III, only two EDG trips remain active (i.e., engine overspeed and generator differential).

The interlocks to the EDG breakers and parallel circuits cause the EDG to automatically reset to ready-to-load operation if a LOCA signal is received during EDG operation in the test mode. Ready-to-load operation is defined as the EDG running at rated speed and voltage with the EDG output breaker open. If offsite power is available, the output breaker remains open and the EDG will continue to run in the ready-to-load condition.

Therefore, the response to a LOCA signal is to automatically override the 24-hour test and remove selected EDG trips from the active trip circuitry. Continued operation of the EDGs in parallel with offsite power sources is automatically terminated thus preventing subsequent failure of offsite power sources from affecting the safety function of the EDGs.

### 3.2 Response to LOOP Signal

The licensee stated that each 4.16 kv ESF bus has its own independent LOOP instrumentation and associated trip logic for LOOP. The voltage for Division I, II, and III buses is monitored at two levels, which may be considered as two different undervoltage functions: loss of voltage and degraded voltage. TS Table 3.3.8.1-1 has the setpoints.

Actuation of the LOOP instrumentation for an ESF bus results in an automatic start signal for its associated EDG; however, there are delay times before the instrumentation is actuated depending on the degree of degraded offsite voltage (i.e., 0.5 second for less than 70 percent voltage and 9 second seconds for less than 90 percent voltage).

For Division I and II, prior to connecting the EDG to its appropriate bus, all loads are shed except feeders to the 480 volt load centers. Provisions are built into the automatic sequencers to recognize a grid undervoltage condition and to automatically place the EDG on the ESF bus after tripping the incoming offsite power source feeder breaker. Should a LOOP condition occur while the EDG is being operated in parallel with an offsite power source, the incoming offsite feeder breakers and EDG output breakers would open (for Division I and II only as discussed in Section 2.0 above) and the EDG would switch from parallel operation to isochronous mode picking up the loads on the bus.

Unlike Division I and II, Division III does not have automatic load shedding and sequencing; however, as with Division I and II, Division III does have undervoltage protection that would activate to open incoming feeder breakers and thus separate the Division III EDG from a degraded grid condition.

For all EDGs, the automatic start due to the actuation of LOOP instrumentation is not an emergency start and thus all normal EDG protective trips remain active (see UFSAR Sections 8.3.1.1.4.1 and 8.3.1.1.4.2.10). While the presence of a loss of preferred power signal may be indicative of either a failure of offsite power sources or a fault on the local ESF bus, it is not indicative of a LOCA and the EDGs would not need the minimal EDG protective trips to assure that they would operate. The minimal EDG protective trips are

discussed in Section 3.1 above for the LOCA signal. This design was reviewed and approved by the staff as documented in Section 8.3.1 of the Safety Evaluation Report, NUREG-0831, dated September 1981, for GGNS.

The licensee stated that, in accordance with the GGNS system design, it is possible that an EDG started as a result of a LOOP signal could trip due to some engine or generator protective trip because, as previously noted, protective EDG trips are not bypassed by a LOOP signal. It is also possible that this trip could result in the actuation of a generator lockout. In this instance, local operator action would be required (i.e., resetting lockout) prior to the EDG restarting and/or resequencing onto the bus following a subsequent signal (either emergency or non-emergency). For emergency starts, local operator action would only be required if a generator lockout protective trip had previously actuated.

The staff has also been concerned that a possible fault on the offsite system could cause a lockout of the ESF bus or could trip the EDG itself, which would delay the EDG's response to an emergency condition. The licensee stated that while one could postulate a grid or bus fault that could actuate an EDG protective trip or lockout, any delay in the EDG response time should be considered acceptable because of the:

- less critical nature of EDG start/load times for LOOP,
- low probability of subsequent events occurring following the initial LOOP, and
- procedural requirements that would tend to minimize EDG response times,

as discussed in the licensee's application. The procedure for testing EDGs has an operator in the room where the local EDG panel is during the test and this would minimize the operator response time to EDG trip or lockout.

The licensee stated that it has done an exhaustive review of relay actuation for an almost unlimited number of possible sequence of events and/or scenarios. The approach taken by the licensee was to confirm the possibility that an EDG lockout could occur, assume that the lockout actuated, and then determine whether this resulted in an unacceptable condition. The licensee also did not attempt to quantify the frequency of the actuation of the lockout relay; however, the licensee stated, based on its experience of operating the EDGs in a similar configuration when performing SR 3.8.1.3 on at least a monthly basis, that the likelihood of such an event is low.

The licensee also stated that a LOOP, unlike a LOCA, does not present an immediate challenge to fuel cladding integrity, reactor water level control, or to the containment, as demonstrated by the bounding 4-hour Station Blackout coping analysis contained in UFSAR Appendix 8-A. The licensee further stated that, if there has only been the loss of offsite power or an individual bus fault, an LOCA has also not occurred, it is not necessary that the EDG respond in the same manner as for the LOCA; therefore, there would be sufficient time for the operator to recover an EDG from a lockout or trip if plant conditions warranted such action.

In addition, the licensee explained that the probability of an accident, as an LOCA, occurring within a relatively short time period following the initial LOOP signal would be extremely low. For the GGNS Individual Plant Examination (IPE), for Generic Letter 88-20 dated November 23, 1988, and its associated supplements, the probability of having a LOOP and a LOCA within the 24-hour test period is  $1.6E-8/\text{yr}$  and ANSI/ANS 52.1-1983 directs that events of frequency  $<1E-6/\text{yr}$ , on a best estimate basis, need not be considered for design. Therefore, the licensee stated that a coincident LOOP/LOCA occurring within the time frame of the EDG test is not a credible event to be designed for.

The licensee explained that potential delays in EDG response times to accidents would be minimized by the way the test is performed. In accordance with procedural requirements, prior to beginning the test suitable communications between the control room and the local EDG room must be established. Also during the first 2 hours of the 24-hour test, the EDG is closely monitored by collecting local data every half an hour and, following the first 2 hours, this data is collected hourly. These procedural requirements help ensure there would be timely local operator response to any abnormal EDG conditions during the test and subsequent recovery from any such event.

The licensee went on to explain that the discussion of this possible lockout/trip scenario has little relevance to the acceptability of the proposed TS change because the testing of an EDG, regardless of the mode of operation in which the test is performed, does not create or increase the possibility of experiencing a fault on the offsite system. The important point is that there exists EDG design features that automatically terminate continued paralleled operation by an EDG with offsite power sources if a LOOP should occur during performance of SR 3.8.1.14 or other EDG surveillances. These features prevent the surveillance testing of an EDG from introducing a new or different type of failure to the plant.

### 3.3 Response to LOCA Coincident With LOOP Signal

In accordance with the accident analyses in UFSAR Chapter 15, the design basis accident (DBA) is the occurrence of a LOCA coincident with LOOP. The initiating event is the LOCA and the simultaneous LOOP is assumed only to ensure a bounding case for the assumed subsequent single failure (i.e., loss of one ESF division). The ESF systems and the EDGs are actuated immediately following receipt of the LOCA signal and, even if the LOCA signal occurs during the time delay before the EDGs response to an LOOP signal, the EDGs are immediately started upon receipt of the LOCA signal.

Consistent with the Chapter 15 analysis and stated in Section 3.1 above, any EDG test would be terminated by the receipt of the LOCA signal. In the case where offsite power is also lost concurrent with the LOCA signal, the EDG will automatically be transferred back onto the ESF bus following the tripping of the offsite feeder breakers. The bus, once isolated from the offsite grid, would be reenergized by the EDG output breakers reclosing. For an EDG in test, the reenergization of the ESF bus will actually be slightly faster than the assumed UFSAR time because the EDG may already be at rated speed and

voltage and thus would only need to have its output breaker reclosed to energize the ESF bus.

The licensee also stated in its application that a review has been performed for EDGs at GGNS that demonstrates the following:

- The EDGs will not trip or be rendered inoperable with a concurrent LOOP and LOCA signal;
- The EDGs are designed to withstand the stresses generated by any credible offsite fault;
- Paralleled operation of the EDGs with offsite power sources will be terminated prior to any credible fault causing the EDG to trip or be locked-out.

Therefore, the EDGs, in the 24-test with the plant at power, will respond to an LOCA even if there is a coincident LOOP signal.

### 3.4 Additional Considerations

The proposed change to SR 3.8.1.14 will not result in a new or different configuration of the EDG system because SR 3.8.1.3 requires the EDGs to be operated in parallel with the offsite power sources while the plant is in Modes 1 or 2 on at least a monthly basis. The proposed change, however, will increase the time spent in this configuration during Modes 1 or 2.

The ability of each EDG to survive a load reject without tripping is verified every 18 months per SR 3.8.1.10. This surveillance would simulate an EDG being operated in parallel with offsite power sources following the receipt of either a LOCA or LOOP signal, and having the EDG output breaker trip open to separate the EDG from paralleled operation with the grid. This surveillance is not being changed by the proposed change and will continue to require a verification of the ability of the EDGs to survive a total load reject.

SR 3.8.1.17 demonstrates, on an 18-month frequency, the capability of the EDG to revert to ready-to-load status following a LOCA signal while operating in parallel test mode and ensures that the EDG availability under emergency core cooling initiation will override the test mode.

Finally, the licensee committed to the following special administrative provisions to manage the risk presented by performing the 24-hour test during Modes 1 and 2:

- Only one EDG will be tested in parallel to the offsite grid in accordance with SR 3.8.1.14 at a time.
- Appropriate precautions/limitations will be provided that cautions against conducting the 24-hour test during periods of severe weather, unstable offsite grid conditions, or maintenance and other test conditions that have an adverse effect on the 24-hour test.



- No additional maintenance or testing will be performed or planned to be performed on required safety systems, subsystems, trains, components and devices that depend on the remaining EDGs as sources of emergency power.

These commitments will limit the number of EDGs that will be tested to one EDG and, thus, only one EDG will be paralleled to the offsite power sources in the test mode. The cautions against conducting the 24-hour test during periods of severe weather, unstable grid conditions, or maintenance and other test conditions will reduce the chance for faults during the 24-hour tests.

### 3.5 Conclusion

After evaluating the licensee's justification for its proposed change to SR 3.8.1.14, the staff concludes that performing the 24-hour EDG test while the unit is in Mode 1 or 2 will not adversely affect the ability of the EDGs to respond to accidents. This is based on the unique EDG design features and administrative controls provided at GGNS. These features are the following:

- An emergency override of the test mode to permit a response to valid safety injection signals while the EDG in test is paralleled with the offsite power sources,
- Alignment of the remaining EDGs so that only one EDG is paralleled to the offsite power sources for testing so that a perturbation in offsite power would affect only one EDG,
- The EDGs will not be paralleled to the offsite power sources during severe weather, unstable offsite grid conditions, or maintenance and test conditions that have an adverse effect on the test,
- No additional maintenance or testing will be performed or planned to be performed on required equipment that depend on the non-paralleled EDGs as sources of emergency power, and
- The excess capacity provided by three EDGs is such that any two out of three EDGs can supply sufficient power to mitigate the consequences of a DBA or safely shut down the unit.

The EDG system response to either a LOCA or LOOP signal, occurring individually or coincidentally, will automatically terminate continued paralleled operation with offsite power sources which will prevent the introduction of a new or different failure from those previously assumed in the accident analysis. Also, the licensee has taken precautions discussed in this evaluation to minimize the chance for a fault to occur when the offsite and onsite power sources are paralleled on a bus during the 24-hour test at Modes 1 and 2.

Based on the above, the staff concludes that the proposed change to allow the 24-hour test in Modes 1 and 2 is acceptable. The response of the EDGs would not be slower than was assumed in the supporting accident analyses for GGNS.

The licensee also submitted a correction to the Bases of the TSs for SR 3.8.1.14 which deletes the statement that the reason for Note 2 is that performance of the SR with the reactor critical could cause perturbations to the electrical distribution systems that would challenge steady state plant operation. This was discussed in Section 2.0 above. Deleting this statement is consistent with approval of the proposed change to SR 3.8.1.14. Therefore, the staff agrees with the licensee's change to the Bases of the TSs for SR 3.8.1.14.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Mississippi State official was notified of the proposed issuance of the amendment. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes 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 changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding, in the Federal Register on May 8, 1996, that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (61 FR 20847). 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 CONCLUSION

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

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