

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

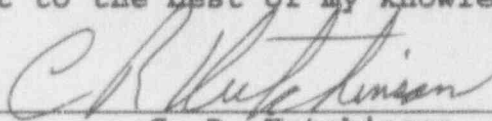
LICENSE NO. NPF-29

DOCKET NO. 50-416

IN THE MATTER OF
MISSISSIPPI POWER & LIGHT COMPANY
and
SYSTEM ENERGY RESOURCES, INC.
and
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION
and
ENTERGY OPERATIONS, INC.

AFFIRMATION

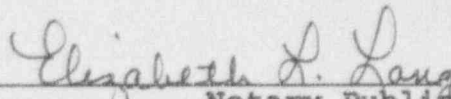
I, C. R. Hutchinson, being duly sworn, state that I am Vice President, Operations GGNS of Entergy Operations, Inc.; that on behalf of Entergy Operations, Inc., System Energy Resources, Inc., and South Mississippi Electric Power Association I am authorized by Entergy Operations, Inc. to sign and file with the Nuclear Regulatory Commission, this application for amendment of the Operating License of the Grand Gulf Nuclear Station; that I signed this application as Vice President, Operations GGNS of Entergy Operations, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information and belief.


C. R. Hutchinson

STATE OF MISSISSIPPI
COUNTY OF CLAIBORNE

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the County and State above named, this 15th day of July, 1993.

(SEAL)


Notary Public

My commission expires:

December 28, 1995

PROPOSED CHANGE TO THE OPERATING LICENSE

LOAD SHEDDING AND SEQUENCING SYSTEM

(GGNS PCOL 93/04 Revision 1)

A. SUBJECT: Load Shedding and Sequencing System

Technical Specification: 4.8.3.1.2 and 4.8.3.2.2

Affected Pages: 3/4 8-16 and 3/4 8-18

B. DISCUSSION:

The Load shedding and sequencing (LSS) system is utilized during a LOCA and/or bus undervoltage (BUV) condition to disconnect (shed) and connect, automatically in sequence, loads on the respective Class 1E buses. Through appropriate coincident logic, the system initiates operation of the diesel generators, selects and provides logic for the sequential loading of the vital busses to minimize stress on the diesel engine. The LSS system monitors bus voltages, offsite power sources and accident conditions on Div I and Div II. The system consists of two solid state LSS panels, one for each division. These panels contain separate sequencers with both manual and automatic test capability. All system logic and timing functions utilize solid state circuits, with buffering relays used for input and output.

Technical Specification 3/4.8.3, "On-Site Power Distribution Systems", specifies operability requirements for the Division 1 and 2 Load Shedding and Sequencing (LSS) systems. Surveillance Requirements 4.8.3.1.2.a (operating) and 4.8.3.2.2.a (shutdown) require that the LSS panels be demonstrated operable:

"At least once per 12 hours by determining that the auto-test system is operating and is not indicating a faulted condition."

With the auto-test feature inoperable, the current TS require the plant to enter a shutdown condition even though the LSS system is capable of performing its specified safety function. This proposed amendment to the Grand Gulf (GGNS) Technical Specifications (TS) requests removal of the Surveillance Requirement for the auto-test system of the LSS panels. Editorial changes to Surveillance Requirements 4.8.3.1.2 and 4.8.3.2.2 are proposed to reflect a single surveillance requirement. Based on the LSS system design and our experience with the system, many of the faults identified on the LSS panel do not represent a failure of the functional capabilities of the LSS system, but rather malfunctions of the auto-test feature itself. The auto-test feature will continue to be utilized to monitor the LSS system and to diagnose LSS system problems. Operability would be based on the LSS system's ability to perform its intended safety function with reasonable assurance and reliability versus the condition of the auto-test feature. This change is consistent with the improved Standard Technical Specifications presented in NUREG 1434 [Ref. 3].

Technical Specifications 3/4.8.3, "On-Site Power Distribution Systems", specifies ACTION statements for situations where either Division 1 or 2 Load Shedding and Sequencing (LSS) system is inoperable. Action is taken in accordance with TS 3.8.3.1 ACTION a.3 which states:

"With one of the above required load shedding and sequencing panels inoperable, restore the inoperable panel to OPERABLE status within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours."

This proposed amendment to the Grand Gulf (GGNS) Technical Specifications (TS) increases the allowed outage time (AOT) for an inoperable load shedding and sequencing (LSS) panel from eight hours to 12 hours. The 12 hour AOT provides a period of time to correct LSS system problems commensurate with the importance of maintaining system operability. The AOT also ensures that the probability of an accident requiring LSS system operability occurring during periods the system is inoperable is minimal. This change is also consistent with the improved Standard Technical Specifications presented in NUREG 1434 [Ref. 3].

C. JUSTIFICATION:

The auto-test system is a non-safety related feature of the LSS system that monitors LSS circuit operation from the electronics that process the input signals up to the output relays of the LSS. The auto-test feature is utilized as a diagnostic tool in identifying LSS system malfunctions. The auto-test feature performs a check of the panel's electronics approximately once every 1.5 seconds. If a fault is detected, the logic displays the step number of the failed test on the control panel, interrupts the auto-test blocking it from further operation, and actuates a control room annunciator alerting the control room operator that the auto-test has detected an apparent fault in the panel's logic. The LSS system's control panel is used in conjunction with manual tests to identify the source of the fault. The auto-test is also terminated upon receipt of a valid LSS actuation signal. Similarly, failure of the auto-test will not affect the ability of the LSS system to perform its safety function.

The manual LSS logic test retained in Surveillance Requirement 4.8.3.1.2 and 4.8.3.2.2 provides for simulating actual LSS panel operating conditions by simulating real panel inputs utilizing test switches on the control panel, and verifying system status by observing control panel indicators. Although the manual LSS logic test does not examine all of the LSS logic circuitry, the test is equivalent to testing of comparable equipment which cannot be actuated during plant operation. This manual LSS logic test, in conjunction with 18-month surveillances performed per TSs 4.3.3.1, 4.3.3.2, 4.8.1.1.2.d.4.a.2, 4.8.1.1.2.d.7.a.2 and 4.8.1.1.2.d.15, provide a comprehensive test of the LSS logic system and are sufficient to demonstrate LSS system operability. Therefore, removal of operability requirements for the auto-test feature of the LSS system is justified.

LCO 3.8.3.1, Action a.1, currently requires the LSS system to be restored to OPERABLE in eight hours or place the unit in a condition where the LCO no longer applies (MODE 4). The Grand Gulf Safety analyses assume that two of the three electrical divisions perform the design basis function of the electrical system. The LSS system functions to connect ESF loads to the associated on-site power source required by TS 3.8.1. With the LSS inoperable, redundancy in the on-site power system is

potentially lost. This condition is similar to the degree of degradation described by level 3 in Regulatory Guide 1.93 [Ref.4]. Level 3 corresponds to the condition where the available off-site and on-site AC sources are each one less than the LCO (i.e., GGNS LCO 3.8.1). This condition would result in the complete loss of an ESF division if the remaining off-site source is lost. According to Regulatory Guide 1.93 (RG 1.93), operation at level 3 may continue for a period not to exceed 12 hours. Although similar to level 3 in that neither an off-site or on-site source is immediately accessible following loss of the functioning power source, inoperability of a single LSS system represents a notable safety improvement over level 3 for the following reasons:

- o LSS system failure does not prevent manual loading of ESF loads to either an available off-site source or the associated diesel generator.
- o Operator training and procedures direct the manual starting and loading of safety equipment in the unlikely event the LSS system fails completely.
- o The GGNS preferred power system design includes three independent circuits capable of supplying power to the ESF busses.
- o The demonstrated overall outage rates (through 1991) of 1.01 and 1.63 outages/year/100 miles of the 500 and 115 kV lines, respectively, lends confidence to the expectation the preferred power source is available at all times.

Therefore, based on the above, an AOT in excess of the current eight hours is justified. In order to expedite NRC review and approval, 12 hours is proposed for the LSS AOT as denoted in NUREG 1434.

D. NO SIGNIFICANT HAZARDS CONSIDERATIONS:

This proposed amendment to the Grand Gulf Nuclear Station (GGNS) Technical Specifications (TS) removes of the Surveillance Requirement for the auto-test system of the load shedding and sequencing (LSS) panels (4.8.3.1.2.a and 4.8.3.2.2.a) and increases the allowed outage time (AOT) for an inoperable LSS panel (ACTION 3.8.3.1.a.3) from eight hours to 12 hours. Editorial changes to Surveillance Requirements 4.8.3.1.2 and 4.8.3.2.2 are proposed to reflect a single surveillance.

The Commission has provided standards for determining whether a no significant hazards consideration exists as stated in 10CFR50.92(c). A proposed amendment to an operating license involves a no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

Entergy Operations Inc. has evaluated the no significant hazards considerations in its request for a license amendment. In accordance with 10CFR50.91(a), Entergy

Operations Inc. is providing the analysis of the proposed amendment against the three standards in 10CFR50.92(c). A description of the no significant hazards considerations determination follows:

1. The proposed changes do not significantly increase the probability or consequences of an accident previously evaluated.

The auto-test feature functions to provide additional assurance the LSS system is capable of responding to valid accident conditions and performing its specified safety function. The auto-test feature is independent of this safety function and is terminated upon receipt of a valid LSS actuation signal. In fact, disabling the auto-test feature has no effect on the LSS system's ability to perform its specified safety function. The manual LSS logic test retained in Surveillance Requirement 4.8.3.1.2 and 4.8.3.2.2 provides for simulating actual LSS panel operating conditions by simulating real panel inputs utilizing test switches on the control panel, and verifying system status by observing control panel indicators. Although the manual LSS logic test does not examine all of the LSS logic circuitry, it is equivalent to testing of comparable equipment which cannot be actuated during plant operation. This test, in conjunction with surveillances performed per TS 4.8.1.1.2.d.4.a.2, 4.8.1.1.2.d.7.a.2 and 4.8.1.1.2.d.15, is sufficient to demonstrate LSS system operability. Therefore, removal of the auto-test feature from the Technical Specifications requirements for LSS system operability does not significantly increase the probability or consequences of an accident previously evaluated.

No safety-related equipment or function will be altered as a result of this change. The increase in the allowed outage time from eight hours to 12 hours provides a period of time to correct LSS system problems commensurate with the importance of maintaining system operability. This change has no influence or impact on the probability or consequences of any accident or malfunction evaluated in the GGNS Updated Final Safety Analysis Report (UFSAR) [Reference 2]. No accident or malfunctions evaluated are affected; therefore, the consequences of these have not significantly increased.

Based on the above, the proposed changes do not significantly increase the probability or consequences of any accident previously evaluated.

2. The proposed changes would not create the possibility of a new or different kind of accident from any previous analyzed.

No new plant equipment or new modes of operation or accident modes are introduced or created by removing the auto-test feature from the TS. The auto-test feature cannot, by its design, initiate or block an LSS system function. Disabling the auto-test feature cannot initiate or block an LSS function. Increasing the AOT from eight to 12 hours has no influence on, nor does it contribute in any way, to the possibility of a new or different kind of accident or malfunction from those previously analyzed. As stated above, no safety-related equipment or safety functions are altered as a result of these changes.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously analyzed.

3. The proposed changes do not involve a significant reduction in a margin of safety.

The function of the auto-test feature is to provide a level of assurance that the LSS system will perform its safety function when required. Continued use of the auto-test feature, the proven reliability of the LSS system, and the system testing retained in the TS, adequately establish operability of the LSS system. Removal of the auto-test feature from the TS operability requirements does not affect the system's ability to perform its safety function when required and, therefore, does not involve a significant reduction in a margin of safety.

The proposed 12 hour AOT for the LSS system ensures that the probability of an accident requiring LSS system operability occurring during periods the system is inoperable is minimal. The margin of safety afforded by the proposed AOT is not significantly less than that provided by the current eight hour AOT. Therefore the margin of safety provided by the current TS is not significantly reduced.

Therefore, the proposed changes do not result in a significant reduction in a margin of safety.

Based on the above evaluation, operation in accordance with the proposed amendment involves no significant hazards considerations.

E. REFERENCES:

1. Grand Gulf Nuclear Station Unit 1 Technical Specifications and Bases, Updated through Amendment 106.
2. Grand Gulf Nuclear Station Final Safety Analysis Report, Updated through Revision 7, Chapters 8 and 15.
3. NUREG 1434, Standard Technical Specifications, General Electric BWR/6 Plants, Revision 0, dated September 29, 1992.
4. Regulatory Guide 1.93, Availability of Electric Power Sources, December 1974.