

March 31, 1987

Docket No.: 50-416

DISTRIBUTION:

Mr. Oliver D. Kingsley, Jr.
Vice President, Nuclear Operations
System Energy Resources, Inc.
Post Office Box 23054
Jackson, Mississippi 39205

Docket File	Young, OGC	EButcher
NRC PDR	RDiggs, LFMB	NThompson
Local PDR	TBarnhart (4)	JPartlow
PD#4 Rdg File	EJordan	JUnda
RBernero	LHarmon	
WButler	BGrimes	
LKintner	WJones	
MO'Brien	DVassallo	
BSiegel	ACRS (10)	
	CMiles, CPA	

Dear Mr. Kingsley:

SUBJECT: CHANGES TO TECHNICAL SPECIFICATIONS REGARDING EMERGENCY
DIESEL GENERATORS

RE: GRAND GULF NUCLEAR STATION, UNIT 1

The Commission has issued the enclosed Amendment No. 30 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated May 22, 1986, as revised December 9, 1986, and January 29, 1987.

This amendment changes the Technical Specifications (TSs) for alternating current electrical power systems by reducing excessive testing of the three onsite emergency diesel generators to be consistent with the recommendations provided in the NRC Generic Letter 84-15 "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability."

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

Sincerely,

/s/

Lester L. Kintner, Project Manager
BWR Project Directorate No. 4
Division of BWR Licensing

Enclosures:

- Amendment No. 30 to License No. NPF-29
- Safety Evaluation

cc w/enclosures:
See next page

8704060132 870331
PDR ADOCK 05000416
P PDR

*Previously concurred:

PD#4/A	PD#4/PM	EICSB
MO'Brien	*LKintner:lb	*EMarinos
3/24/87	03/23/87	03/23/87

Will check STATE & SECY before is advised

OGC	PD#4/D
Young	WButler
3/24/87	3/30/87

WB



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

March 31, 1987

Docket No.: 50-416

Mr. Oliver D. Kingsley, Jr.
Vice President, Nuclear Operations
System Energy Resources, Inc.
Post Office Box 23054
Jackson, Mississippi 39205

Dear Mr. Kingsley:

SUBJECT: CHANGES TO TECHNICAL SPECIFICATIONS REGARDING EMERGENCY
DIESEL GENERATORS

RE: GRAND GULF NUCLEAR STATION, UNIT 1

The Commission has issued the enclosed Amendment No. 30 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated May 22, 1986, as revised December 9, 1986, and January 29, 1987.

This amendment changes the Technical Specifications (TSs) for alternating current electrical power systems by reducing excessive testing of the three onsite emergency diesel generators to be consistent with the recommendations provided in the NRC Generic Letter 84-15 "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability."

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

Sincerely,

A handwritten signature in cursive script that reads "L L Kintner".

Lester L. Kintner, Project Manager
BWR Project Directorate No. 4
Division of BWR Licensing

Enclosures:

1. Amendment No. 30 to License No. NPF-29
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. Oliver D. Kingsley, Jr.
System Energy Resources, Inc.

Grand Gulf Nuclear Station (GGNS)

cc:

Mr. Ted H. Cloninger
Vice President, Nuclear Engineering
and Support
System Energy Resources, Inc.
Post Office Box 23054
Jackson, Mississippi 39205

Mr. C. R. Hutchinson
GGNS General Manager
System Energy Resources, Inc.
Post Office Box 756
Port Gibson, Mississippi 39150

Robert B. McGehee, Esquire
Wise, Carter, Child, Steen and Caraway
P.O. Box 651
Jackson, Mississippi 39205

The Honorable William J. Guste, Jr.
Attorney General
Department of Justice
State of Louisiana
Baton Rouge, Louisiana 70804

Nicholas S. Reynolds, Esquire
Bishop, Liberman, Cook, Purcell
and Reynolds
1200 17th Street, N.W.
Washington, D. C. 20036

Office of the Governor
State of Mississippi
Jackson, Mississippi 39201

Mr. Ralph T. Lally
Manager of Quality Assurance
Middle South Utilities System
Services, Inc.
P.O. Box 61000
New Orleans, Louisiana 70161

Attorney General
Gartin Building
Jackson, Mississippi 39205

Mr. John G. Cesare
Director, Nuclear Licensing and Safety
System Energy Resources, Inc.
P.O. Box 23054
Jackson, Mississippi 39205

Mr. Jack McMillan, Director
Division of Solid Waste Management
Mississippi Department of Natural
Resources
Bureau of Pollution Control
Post Office Box 10385
Jackson, Mississippi 39209

Mr. R. W. Jackson, Project Engineer
Bechtel Power Corporation
15740 Shady Grove Road
Gaithersburg, Maryland 20877-1454

Alton B. Cobb, M.D.
State Health Officer
State Board of Health
P.O. Box 1700
Jackson, Mississippi 39205

Mr. Ross C. Butcher
Senior Resident Inspector
U.S. Nuclear Regulatory Commission
Route 2, Box 399
Port Gibson, Mississippi 39150

President
Claiborne County Board of Supervisors
Port Gibson, Mississippi 39150

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W., Suite 2900
Atlanta, Georgia 30323

Mr. James E. Cross
GGNS Site Director
System Energy Resources, Inc.
P.O. Box 756
Port Gibson, Mississippi 39150



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

MISSISSIPPI POWER & LIGHT COMPANY
SYSTEM ENERGY RESOURCES, INC.
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION
DOCKET NO. 50-416
GRAND GULF NUCLEAR STATION, UNIT 1
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 30
License No. NPF-29

1. The Nuclear Regulatory Commission (the Commission) has found that
 - A. The application for amendment by Mississippi Power & Light Company, System Energy Resources, Inc. (formerly Middle South Energy, Inc.) and South Mississippi Electric Power Association, (the licensees) dated May 22, 1986, as revised December 9, 1986, and January 29, 1987, 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:

Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 30, are hereby incorporated into this license. System Energy Resources, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

8704060137 870331
PDR ADOCK 05000416
PDR

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

FOR THE NUCLEAR REGULATORY COMMISSION

/s/

Walter R. Butler, Director
BWR Project Directorate No. 4
Division of BWR Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 31, 1987

PD#4/LB
M. B. Ten
3/24/87

PD#4/PM
L. Kintrner:1b
3/23/87

OGC
M. J. G. [unclear]
3/24/87
*OGC
advise STATE & SECY
before issuance*

PD#4/D
W. Butler
3/30/87

WB

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

FOR THE NUCLEAR REGULATORY COMMISSION

Walter R. Butler

Walter R. Butler, Director
BWR Project Directorate No. 4
Division of BWR Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 31, 1987

ATTACHMENT TO LICENSE AMENDMENT NO.

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Overleaf page(s) provided to maintain document completeness.*

Remove

3/4 8-1
3/4 8-2

3/4 8-3
3/4 8-3a

3/4 8-4

3/4 8-7
3/4 8-8

B 3/4 8-1a

Insert

3/4 8-1
3/4 8-2

3/4 8-3
3/4 8-3a

3/4 8-4*

3/4 8-7*
3/4 8-8*

B 3/4 8-1a

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

A.C. SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Three separate and independent diesel generators, each with:
 1. Separate day fuel tanks containing a minimum of 220 gallons of fuel.
 2. A separate fuel storage system containing a minimum of:
 - a) 57,200 gallons of fuel each for diesel generators 11 and 12, and
 - b) 39,000 gallons of fuel for diesel generator 13.
 3. A separate fuel transfer pump.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

- a. With one offsite circuit of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4* for one diesel generator at a time within 24 hours. Restore the offsite circuit to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- b. With either diesel generator 11 or 12 of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the above required A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4* within 24 hours. Restore the inoperable diesel generator to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

*Specification 4.8.1.1.2.a.4 must be performed for diesel generator 13 only when the HPCS system is OPERABLE.

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

- c. With one offsite circuit and diesel generator 11 or 12 of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generators, for one diesel generator at a time, by performing Surveillance Requirement 4.8.1.1.2.a.4* within 8 hours. Restore at least one of the inoperable A.C. sources to OPERABLE status within 12 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- d. With either diesel generator 11 or 12 of the above required A.C. electrical power sources inoperable, in addition to ACTION b or c, as applicable, verify within 2 hours that all required systems, subsystems, trains, components and devices that depend on the remaining OPERABLE diesel generator 11 or 12 as a source of emergency power are also OPERABLE; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- e. With both of the above required offsite circuits inoperable, demonstrate the OPERABILITY of the three required diesel generators, by performing Surveillance Requirement 4.8.1.1.2.a.4* for one diesel generator at a time within 8 hours unless the diesel generators are already operating. Restore at least one of the above required offsite circuits to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours.
- f. With diesel generators 11 and 12 of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore at least one of the inoperable diesel generators 11 or 12 to OPERABLE status within 2 hours and demonstrate the OPERABILITY of diesel generator 13 within the next 2 hours by performing Surveillance Requirement 4.8.1.1.2.a.4* or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- g. With diesel generator 13 of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the offsite A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Demonstrate the OPERABILITY of the remaining OPERABLE diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 for one diesel generator at a time within 2 hours. Restore diesel generator 13 to OPERABLE status within 72 hours or declare the HPCS system inoperable and take the ACTION required by Specification 3.5.1.

*Specification 4.8.1.1.2.a.4 must be performed for diesel generator 13 only when the HPCS system is OPERABLE.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by manually transferring unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each of the above required diesel generators shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8.1.1.2-1 on a STAGGERED TEST BASIS by:
 1. Verifying the fuel level in the day tank.
 2. Verifying the fuel level in the fuel storage tank.
 3. Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day tank.
 - 4.* Verifying the diesel starts from standby condition and accelerates to at least 441 rpm for diesel generators 11 and 12 and 882 rpm for diesel generator 13 in less than or equal to 10 seconds. The generator voltage and frequency shall be 4160 ± 416 volts and 60 ± 1.2 Hz within 10 seconds after the start signal. The diesel generator shall be started for this test by using one of the following signals:
 - a) Manual.
 - b) Simulated loss of offsite power by itself.
 - c) Simulated loss of offsite power in conjunction with an ESF actuation test signal.
 - d) An ESF actuation test signal by itself.

*All diesel generator starts for the purpose of this Surveillance Requirement may be preceded by an engine prelube period. The diesel generator start (10 sec) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing may be preceded by warmup procedures as recommended by the manufacturer so that the mechanical stress and wear on the diesel engine are minimized.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

5. # Verifying the diesel generator is synchronized, loaded to greater than or equal to 5450 kW but not to exceed 5740 kW for diesel generators 11 and 12 and 3300 kW for diesel generator 13 in less than or equal to 60 seconds, and operates with these loads for at least 60 minutes.
6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
7. Verifying the pressure in all diesel generator air start receivers to be greater than or equal to:
 - a) 160 psig for diesel generators 11 and 12, and
 - b) 175 psig for diesel generator 13.
- b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day fuel tanks.

#The diesel generator loading (60 sec) shall be performed at least once per 184 days in these surveillance tests. All other diesel engine runs for the purpose of this surveillance testing may include gradual loading as recommended by the manufacturer so that the mechanical stress and wear on the diesel engine are minimized.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. At least once per 92 days and from new oil prior to addition to the storage tanks by verifying that a sample obtained in accordance with ASTM-D270-1965 (reapproved 1980) has a water and sediment content of less than or equal to .05 volume percent and a kinematic viscosity @ 40°C of greater than or equal to 1.9 but less than or equal to 4.1 when tested in accordance with ASTM-D975-77, and an impurity level of less than 2 mg. of insolubles per 100 ml. when tested in accordance with ASTM-D2274-70, except that the test of new fuel for impurity level shall be performed within 7 days after addition of the new fuel to the storage tank.
- d. At least once per 18 months, during shutdown, by:
1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.
 2. Verifying the diesel generator capability to reject a load of greater than or equal to 1200 kW (LPCS Pump) for diesel generator 11, greater than or equal to 550 kW (RHR B/C Pump) for diesel generator 12, and greater than or equal to 2180 kW (HPCS Pump) for diesel generator 13 while maintaining less than or equal to 75% of the difference between nominal speed and the overspeed trip setpoint, or 15% above nominal, whichever is less.
 3. Verifying the diesel generator capability to reject a load of at least 5450 kW but not to exceed 5740 kW for diesel generators 11 and 12 and 3300 kW for diesel generator 13 without tripping. The generator voltage shall not exceed 5000 volts during and following the load rejection.
 4. Simulating a loss of offsite power by itself, and:
 - a) For Divisions 1 and 2:
 - 1) Verifying deenergization of the emergency busses and load shedding from the emergency busses.
 - 2) Verifying the diesel generator starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 416 volts and 60 ± 1.2 Hz during this test.
 - b) For Division 3:
 - 1) Verifying de-energization of the emergency bus.
 - 2) Verifying the diesel generator starts on the auto-start signal, energizes the emergency bus with the loads within 10 seconds and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization, the steady state voltage and frequency of the emergency bus shall be maintained at 4160 ± 416 volts and 60 ± 1.2 Hz during this test.

ELECTRICAL POWER SYSTEMS

SURVILLANCE REQUIREMENTS (Continued)

16. Verifying that the following diesel generator lockout features prevent diesel generator starting and/or trip the diesel generator only when required:
- a) Generator loss of excitation.
 - b) Generator reverse power.
 - c) High jacket water temperature.
 - d) Generator overcurrent with voltage restraint.
 - e) Bus underfrequency (11 and 12 only).
 - f) Engine bearing temperature high (11 and 12 only).
 - g) Low turbo charger oil pressure (11 and 12 only).
 - h) High vibration (11 and 12 only).
 - i) High lube oil temperature (11 and 12 only).
 - j) Low lube oil pressure (13 only).
 - k) High crankcase pressure.
 - l) Generator ground overcurrent (11 and 12 only).

e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting all three diesel generators simultaneously, during shutdown, and verifying that the three diesel generators accelerate to at least 441 rpm for diesel generators 11 and 12 and 882 rpm for diesel generator 13 in less than or equal to 10 seconds.

f. At least once per 10 years by:

- 1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite or equivalent solution, and
- 2. Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code in accordance with ASME Code Section XI, Article IWD-5000.

4.8.1.1.3 Reports - All diesel generator failures, valid or non-valid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests, on a per nuclear unit basis, is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

TABLE 4.8.1.1.2-1
DIESEL GENERATOR TEST SCHEDULE

<u>Number of Failures in Last 100 Valid Tests*</u>	<u>Test Frequency</u>
≤ 1	At least once per 31 days
2	At least once per 14 days
≥ 3	At least once per 7 days

*Criteria for determining number of failures and number of valid test shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, Revision 1, August 1977, where the last 100 tests are determined on a per diesel generator basis. For the purposes of this test schedule, only valid tests conducted after the OL issuance date of June 16, 1982 shall be included in the computation of the "last 100 valid tests."

ELECTRICAL POWER SYSTEMS

BASES

A.C. SOURCES, D.C. SOURCES and ONSITE POWER DISTRIBUTION SYSTEMS (Continued)

restricted as noted in a letter from E. G. Adensam to L. F. Dale, dated 17 July 1984. The SSW pump load values are not used as the largest single load rejected from the diesel generators when testing to meet the requirements of Regulatory Guide 1.9. Since the SSW system supplies cooling water to its associated diesel generator, tripping the SSW pump to perform this test would result in loss of the diesel generator.

An exception is taken with respect to Regulatory Guide 1.108 requirements on the surveillance test frequency for the diesel generators in relationship to the number of valid failures. The test frequency provided in Table 4.8.1.1.2-1 provides adequate assurance of diesel generator availability without causing degradation due to excessive engine starts. The determination of valid failures on a per diesel generator basis reflects that failures on one diesel generator do not necessarily reflect the same problem on the remaining diesel generators.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 30 TO FACILITY OPERATING LICENSE NO. NPF-29
MISSISSIPPI POWER & LIGHT COMPANY
SYSTEM ENERGY RESOURCES, INC.
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION
GRAND GULF NUCLEAR STATION, UNIT 1
DOCKET NO. 50-416

1.0 INTRODUCTION

By letter dated May 22, 1986, Mississippi Power & Light Company, (the licensee)* requested an amendment to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. The proposed amendment would change the Technical Specifications related to emergency diesel generator testing in response to Generic Letter 84-15 (GL 84-15), "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability."

The objective of diesel generator (DG) periodic surveillance testing is to demonstrate the reliability of the diesel generators. Such surveillance testing provides assurance of the availability of the diesel generators for mitigating various transients and postulated accidents following a loss of offsite power. The reliability goals for emergency diesel generators are provided in Regulatory Guide 1.108, (RG 1.108) "Periodic Testing of Diesel Generator Units used as Onsite Electric Power Systems at Nuclear Power Plants." RG 1.108 recommends that reliability be demonstrated with more frequent testing as the number of failures increases. Thus, Technical Specifications require that the DGs be tested in accordance with Regulatory Guide 1.108 where the test interval depends on the demonstrated DG performance. In RG 1.108, the test interval is established conservatively on a per nuclear unit basis rather than on a per diesel generator basis. The proposed changes to the Technical Specifications related to diesel generator testing consist of reducing the number of "fast cold" starts, eliminating excessive testing, alleviating the frequency of certain testing which may have a potential for degradation of the DG and modifying the test interval based on failures per diesel generator unit rather than per nuclear unit.

*On December 20, 1986, the Commission issued License Amendment No. 27 which authorized the transfer of control and performance of licensed activities from Mississippi Power & Light Company to System Energy Resources, Inc. (SERI). "The licensee" refers to Mississippi Power & Light Company before December 20, 1986 and to SERI on or after December 20, 1986.

B704060142 B70331
PDR ADCK 05000416
P PDR

The staff reviewed the licensee's May 22, 1986, submittal and transmitted its safety evaluation to the licensee by letter dated October 23, 1986. The staff concluded that the changes proposed by the licensee's May 22, 1986, submittal were partially acceptable and partially not acceptable, and requested that unacceptable parts be revised. These requested revisions were submitted by the licensee on December 9, 1986, and January 29, 1987. All three submittals form the basis for the staff's evaluation described below.

2.0 EVALUATION

The licensee has proposed changes to Technical Specifications to reduce diesel generator (DG) testing. The staff has for sometime been evaluating the frequency of DG testing and the associated potential for severe degradation of engine parts due to frequent cold fast start testing. The staff concludes that test frequency can be reduced to minimize this potential without affecting the overall DG reliability. The licensee was requested in GL 84-15 to consider several changes to their TSs as follows:

- (1) Reduced testing under cold starting and rapid loading conditions;
- (2) Reduced testing of diesel generators from every eight hours to once within 24 hours when a diesel generator or offsite line is inoperable;
- (3) Testing of DGs based on the number of failures on a per diesel generator basis rather than unnecessarily testing all diesel generators;
- (4) Reduced test frequency for an individual diesel generator based on the number of failures from the present minimum interval of every three days to a minimum of seven days.

These changes were requested as an interim action on DG testing prior to final resolution of Generic Issue B-56.

The staff has reviewed the licensee's proposed changes to determine whether the changes are consistent with the guidelines of Generic Letter 84-15. The results of our review of the proposed amendments to 3/4.8.1.1 are:

- (1) Action Statement a (actions to be taken upon declaring either one of the two required offsite circuits or diesel generator 11 or 12 inoperable) would be divided into two action statements; Action Statement a, for one offsite circuit inoperable and Action Statement b, for either diesel generator 11 or 12 inoperable. Proposed Action Statements a and b would require the performance of Surveillance Requirement 4.8.1.1.2.a.4 (verifying operability of the remaining diesel generators) within 24 hours of declaring the offsite circuit or diesel generator inoperable. The present requirement is to perform the surveillance within two hours and at least once per eight hours thereafter. Also, the time allowed for restoration to operable status (72 hours) would be clarified by specifying that inoperable equipment will be restored to operable status within 72 hours "from time of initial loss." These changes are in accordance with GL 84-15 guidelines and are, therefore, acceptable.

- (2) Action Statement b (actions to be taken upon declaring one offsite circuit and either diesel generator 11 or 12 inoperable) would be designated Action Statement c and would be changed to require the performance of Surveillance Requirement 4.8.1.1.2.a.4 within eight hours. The present requirement is to perform this surveillance testing within two hours and at least once per eight hours thereafter. Since two A.C. sources are inoperable, testing of the remaining sources would occur sooner (within eight hours) than would testing with only one A.C. source inoperable (within 24 hours). These changes are consistent with GL 84-15 guidelines and are therefore acceptable. The deletion of the statement regarding time allowed for restoration of all required offsite circuits and diesel generators to operable status (72 hours) is acceptable because it would be redundant to similar statements in proposed Action Statements a and b.
- (3) Action Statement c would be designated Action Statement d and only the references to other action statements would be changed to be consistent with the proposed TS. This administrative change is acceptable.
- (4) Action Statement d (actions to be taken upon declaring two offsite power circuits inoperable) would be designated Action Statement e and would be changed to require performance of Surveillance Requirement 4.8.1.1.2.a.4 within eight hours. The present requirement is to perform this surveillance testing within two hours and at least once per eight hours thereafter. These changes are consistent with GL 84-15 guidelines and are, therefore, acceptable. The deletion of the statement regarding time allowed for restoration of both offsite power circuits to operable status is acceptable because it would be redundant to a similar statement in proposed Action Statement a.
- (5) Action Statement 3 (actions to be taken upon declaring diesel generators 11 and 12 inoperable) would be designated Action Statement f and would be changed by deleting the present requirement to perform Surveillance Requirement 4.8.1.1.2.a.4 for diesel generator 13 within two hours from the time of initial loss and at least once per eight hours thereafter. In the proposed Action Statement f, performance of Surveillance Requirement 4.8.1.1.2.a.4 for diesel generator 13 within two hours of the restoration to operability of either diesel generator 11 or 12 would be a condition for continued operation. This proposed action statement is acceptable to the staff because it does not require testing of diesel generator 13, unless either diesel generator 11 or 12 is restored to operability, thus complying with the guidelines in GL 84-15 to reduce excessive diesel generator testing.
- (6) Action Statement f (actions to be taken upon declaring diesel generator 13 inoperable) would be designated Action Statement g and would be changed to require the performance of Surveillance Requirement 4.8.1.1.2.a.4 for diesel generators 11 and 12 within two hours. The

present requirement is to perform this surveillance testing within two hours and at least once per eight hours thereafter. This change is in accordance with the staff's October 23, 1986, safety evaluation and complies with the GL 84-15 guidelines to reduce excessive diesel generator testing and is, therefore, acceptable.

- (7) Surveillance Requirement 4.8.1.1.2.a.4 (testing required to demonstrate diesel generator starting capability) would be revised by changing the term for initial testing conditions from "ambient" to "standby" and by adding a footnote to specify allowable initial conditions for testing. The proposed footnote would allow all diesel generator starts to be preceded by an engine prelube period. The footnote would also allow surveillance testing to be preceded by warmup procedures except that a fast cold start (ten seconds) from standby conditions would be required once per 184 days. The present requirement is to perform all testing from ambient (standby) conditions. The proposed change to allow engine prelube and warmup procedures on most starting tests is consistent with GL 84-15 guidelines and is, therefore, acceptable.
- (8) Surveillance Requirement 4.8.1.1.2.a.5 (testing required to demonstrate diesel generator loading capability) would be revised by adding a footnote to specify allowable loading conditions for testing. The footnote would allow gradual loading during surveillance testing except that fast loading (within 60 seconds) would be required once per 184 days. The present requirement is to perform all testing with fast loading. The proposed change is consistent with GL 84-15 guidelines and is, therefore, acceptable.
- (9) Table 4.8.1.1.2-1 (diesel generator test frequency as a function of valid test failures) would be revised to: (a) make the maximum test frequency once per seven days instead of the present maximum frequency of once per three days; (b) base the determination of number of test failures on a per diesel generator basis instead of the present requirement to base the number of failures on a per nuclear unit basis; (c) clarify the starting date for counting valid tests by adding the OL issuance date; and, (d) clarify the use of the table by deleting the statement "Entry in this test schedule shall be made at the 31 day test frequency." Test frequencies that are too large could have an adverse impact on DG reliability. In its October 23, 1986, safety evaluation the staff recommended a maximum frequency of once per seven days. Therefore the proposed change is acceptable. The staff and industry consensus is that current requirements for testing of good DGs do not improve reliability of the good DGs, may be a factor in potential degradation of the good DGs, and may have negative effects on expected life; hence, such testing is not warranted. Therefore, we concur with the licensee's proposal to limit DG failure on a per diesel generator basis rather than on a per nuclear unit basis. This is consistent with Generic Letter 84-15 guidelines on DG reliability and is, therefore, acceptable.

- (10) The TS Bases 3/4.8.1 (alternating current sources) would be changed to reflect the proposed changes to TS 3/4.8.1 regarding a reduced maximum test frequency and determination of the number of test failures on a per diesel generator basis rather than a per nuclear unit basis. The changes to the Bases are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The 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 that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this 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 this amendment.

4.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (52 FR 5859) on February 26, 1987, and consulted with the state of Mississippi. No public comments were received, and the state of Mississippi did not have any comments.

The staff 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and the security nor to the health and safety of the public.

Principal Contributor: S. C. Rhow, Electrical, Instrumentation and Control Systems Branch, DBL

Dated: March 31, 1987