MISSISSIPPI POWER & LIGHT COMPANY
Helping Build Mississippi
P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

July 20, 1984

J. B. RICHARD
SENIOR VICE PRESIDENT - NUCLEAR

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Attention: Mr. Harold R. Denton, Director

Dear Mr. Denton:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File 0260/0840/L-860.0
Proposed Amendment to the Operating License (PCOL-84/17)
AECM-84/0374

In accordance with the provisions of 10 CFR 50.59 and 10 CFR 50.90, Mississippi Power & Light (MP&L) requests an amendment to License NPF-13, for Grand Gulf Nuclear Station (GGNS) Unit 1. This proposed amendment is being submitted to comply with the request contained in the July 17, 1984 letter from E. G. Adensam (NRC) to L. F. Dale (MP&L) regarding the TDI Engine Inspection.

In accordance with provisions of 10 CFR 50.30, three (3) signed originals and forty (40) copies of the requested amendment are enclosed. The attachment provides the complete technical justification and di cussion to support the requested amendment. This amendment has been reviewed and accepted by the Plant Safety Review Committee (PSRC) and the Safety Review Committee (SRC).

Based on the guidelines presented in 10 CFR 50.92, it is the opinion of MP&L that this proposed amendment involves no significant hazards considerations.

Based upon an evaluation of the proposed changes, MP&L has concluded that there should be no additional fee for the proposed technical specification changes.

Yours truly,

JBR:rg
Attachments: GGNS PCOL-84/17

cc: (See Next Page)

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MISSISSIPPI POWER & LIGHT COMPANY

cc: Mr. G. B. Taylor (w/o)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/o)

Mr. J. P. O'Reilly (w/a)
Regional Administrator
Region II
101 Marietta Street, N.W., Suite 2900
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Mr. R. C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Alton B. Cobb (w/a)
State Health Officer
State Board of Health
Box 1700
Jackson, Mississippi 39205

BEFORE THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

LICENSE NO. NPF-13

DOCKET NO. 50-416

IN THE MATTER OF

MISSISSIPPI POWER & LIGHT COMPANY
and
MIDDLE SOUTH ENERGY, INC.
and
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

AFFIRMATION

I, J. B. Richard, being duly sworn, stated that I am Senior Vice President - Nuclear of Mississippi Power & Light Company; that on behalf of Mississippi Power & Light Company, Middle South Energy, Inc., and South Mississippi Electric Power Association I am authorized by Mississippi Power & Light Company 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 Senior Vice President - Nuclear of Mississippi Power & Light Company; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information and belief.

J. B. Richard

STATE OF MISSISSIPPI
COUNTY OF HINDS

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the County and State above named, this 20th day of July, 1984.

(SEAL)

Notary Public

My commission expires:

October 22, 1987

V38rg1

SUBJECT: Technical Specification 4.8.1.1.2.a.5, 4.8.1.1.2.d.3, 4.8.1.1.2.d.9, 4.8.1.1.2.d.10, and Bases 3/4.8.1. The affected pages are 3/4 8-3, 3/4 8-4, 3/4 8-6, and B 3/4 8-1.

DESCRIPTION OF CHANGES:

This proposed change reduces the required loading, during testing, for diesel generators 11 and 12. It is proposed that the present 7000 KW and 7700 KW loading requirements in the Technical Specifications be reduced to 5450 KW. This change also applies a maximum load of 5740 KW to the diesel generators during the required surveillance testing. This change also would limit the auto-connected loads on the Division I and II diesel generators.

JUSTIFICATION: The NRC has expressed a concern regarding the reliability of the TDI diesels at GGNS and requested in a letter from E. G. Adensam to L. F. Dale, dated July 17, 1984 (MAEC-84/0267), that MP&L propose changes to the Technical Specifications. It was requested that the changes specify that the monthly and the 18 month surveillance testing be conducted at an engine load corresponding to 185 psig Brake Mean Effective Pressure (BMEP). MP&L has determined that a generator load of approximately 5740 KW corresponds to 185 psig BMEP.

In complying with the NRC request, MP&L has determined that the test values for the diesel generator loading should be specified as at least 5450 KW, but not to exceed 5740 KW.

The lower value of 5450 KW is approximately 78% of the continuous rating of the diesels and is greater than the auto-connected loads required for the loss of offsite power and post-LOCA conditions. Loss of offsite power loads and LOCA loads required to shutdown the plant and maintain it in a safe condition represent less than 70% of the continuous rating. There exists sufficient capacity and capability in the onsite power supplies to assure that (1) the fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents as requried by GDC-17. The upper limit of 5740 KW will ensure that the NRC requested value is not exceeded during testing. These limits (5450 KW and 5740 KW) establish a reasonable, achievable test band that will permit verification of operability while ensuring that the requested load limit is not exceeded.

Requiring verification that the auto-connected loads do not exceed the reduced value will ensure that the sequential loading of the diesels during emergency operations will not exceed 5740 KW.

Testing at this reduced load would still demonstrate that the diesel generators are capable of providing the required electrical power necessary to supply the loads required for a loss of offsite power or LOCA event. Limiting the engine load during testing to this reduced load would enhance the potential for engine availability during accident conditions by reducing the stresses and wear placed on the engine components due to the frequent surveillance testing.

SIGNIFICANT HAZARDS CONSIDERATIONS:

The proposed change limits the load at which the Division I and Division II diesel generators are tested at during the surveillance testing. This limit has been established per NRC request in order to better assure the reliability of the diesel generators. The new test limit is greater than the maximum loading required to safely shutdown the plant following a design basis accident.

This change in the diesel generator loading during testing does not increase the probability of different accidents or equipment malfunctions from those currently evaluated in the FSAR. This change does not reduce the margin of safety as the design continuous load rating of the diesel generators has not been affected. Thus no significant hazards considerations are associated with this change.

It is the MP&L position that such limits are not required; however, these limits will decrease the working stresses and wear in the diesel engine components. This reduction would of course, contribute to the enhanced reliability and life of the engine.

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 ambient 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 ±'476 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.

5. Verifying the diesel generator is synchronized, loaded to greater than or equal to ~~7000 kW~~ 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 generator 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.

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-D270-1975 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 ~~7000 kW~~ 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.

SURVEILLANCE REQUIREMENTS (Continued)

8. Verifying that all automatic diesel generator trips are automatically bypassed upon an ECCS actuation signal except:

   a) For Divisions 1 and 2, engine overspeed, generator differential current, low lube oil pressure, and generator ground overcurrent.

   b) For Division 3, engine overspeed and generator differential current.

9. Verifying the diesel generator operates for at least 24 hours. ~~During the first 2 hours of this test, the diesel generator shall be loaded to greater than or equal to 7700 kW for diesel generators 11 and 12 and 3630 kW for diesel generator 13 and during the remaining 22 hours of this test, the diesel generator shall be loaded to 7000 kW for diesel generators 11 and 12 and 3300 kW for diesel generator 13.~~ The generator voltage and frequency shall be 4160 ± 416 volts and 60 ± 1.2 Hz within 10 seconds after the start signal; the steady state generator voltage and frequency shall be maintained within these limits during this test. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.d.7.a).2) and b).2)*.

10. Verifying that the auto-connected loads to each diesel generator do not exceed ~~the continuous rating of 7000~~ 5740 kW for diesel generators 11 and 12 and 3300 kW for diesel generator 13.

11. Verifying the diesel generator's capability to:

    a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,

    b) Transfer its loads to the offsite power source, and

    c) Be restored to its standby status.

12. Verifying that with the diesel generator operating in a test mode and connected to its bus that a simulated ECCS actuation signal:

    a) For Divisions 1 and 2, overrides the test mode by returning the diesel generator to standby operation.

    b) For Division 3, overrides the test mode by bypassing the diesel generator automatic trips per Surveillance Requirement 4.8.1.1.2.d.8.b).

13. Verifying that with all diesel generator air start receivers pressurized to less than or equal to 256 psig and the compressors secured, the diesel generator starts at least 5 times from ambient conditions 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.

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Diesel generators 11 and 12 shall be loaded to greater than 5450 kw but not to exceed 5740 kw for 24 hours. Diesel generator 13 shall be loaded to greater than or equal to 3630 kw for the first 2 hours of this test and to 3300 kw during the remaining 22 hours.

* If Surveillance Requirement 4.8.1.1.2.d.4.a)2) or b)2) are not satisfactorily completed, it is not necessary to repeat the preceding 24 hour test. Instead, the diesel generator may be operated at rated load for one hour or until operating temperatures have stabilized.

3/4.8.1, 3/4.8.2 and 3/4.8.3 A.C. SOURCES, D.C. SOURCES and ONSITE POWER DISTRIBUTION SYSTEMS

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety related equipment required for (1) the safe shutdown of the facility and (2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources are consistent with the initial condition assumptions of the accident analyses and are based upon maintaining at least Division 1 or 2 of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source. Division 3 supplies the high pressure core spray (HPCS) system only.

The A.C. and D.C. source allowable out-of-service times are based on Regulatory Guide 1.93, "Availability of Electrical Power Sources", December 1974. When diesel generator 11 or 12 is inoperable, there is an additional ACTION requirement to verify 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. This requirement is intended to provide assurance that a loss of offsite power event will not result in a complete loss of safety function of critical systems during the period diesel generator 11 or 12 is inoperable. The term verify as used in this context means to administratively check by examining logs or other information to determine if certain components are out-of-service for maintenance or other reasons. It does not mean to perform the surveillance requirements needed to demonstrate the OPERABILITY of the component.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that (1) the facility can be maintained in the shutdown or refueling condition for extended time periods and (2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

The surveillance requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guide 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies", March 10, 1971, Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants", Revision 1, August 1977 and Regulatory Guide 1.137" Fuel-Oil Systems for Standby Diesel Generators", Revision 1, October 1979, except the Division 1 and 2 diesel load testing requirements that were restricted as noted in a letter from E.G. Adensam to L.F. Dale, dated 17 July 1984.