



MISSISSIPPI POWER & LIGHT COMPANY

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NUCLEAR LICENSING & SAFETY DEPARTMENT

July 3, 1984

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
Units 1 and 2
Docket Nos. 50-416 and 50-417
License No. NPF-13
File 0260/L-860.0
Technical Specification Problem
Sheet Resolutions
AECM-84/0326

In accordance with the provisions of a letter from Mr. Thomas M. Novak to Mr. J. P. McGaughy, dated May 9, 1984, Mississippi Power & Light (MP&L) Company has submitted to the Nuclear Regulatory Commission (NRC) all proposed changes to the Technical Specifications generated as a result of the Technical Specification Review Program (TSRP). In addition to these changes, the TSRP identified three problems that may result in Grand Gulf Nuclear Station design changes. This letter provides descriptions of the problems and commitment dates for resolution.

Recent discussions between MP&L and the NRC have resulted in agreements for interim resolution to three technical specification problem sheets (TSPS) as discussed below:

- 1) (TSPS #808) Present design of the diesel generator trip systems for Divisions 1 and 2 do not include automatic bypasses for engine overspeed, generator differential current, low lube oil pressure, and generator ground overcurrent upon an ECCS actuation signal. This design is in compliance with Final Safety Analysis Report (FSAR) descriptions and complies with Regulatory Guide 1.9 (3/10/71) to which Grand Gulf is committed. However, Regulatory Guide 1.9, Revision 2 (December 1979) allows only engine-overspeed and generator differential trips to be implemented by a single-channel trip. Any other trips retained upon an ECCS actuation signal must utilize coincident logic in order to avoid spurious trips. A proposed solution for this problem sheet is to implement a design change that will remove trips other than engine overspeed and generator differential current that do not utilize coincident logic.

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The Grand Gulf design for Division 1 and 2 diesel generators incorporates a generator ground overcurrent trip without coincident logic. The ground overcurrent trip function responds to slowly developing, relatively low magnitude ground fault conditions whereas the generator differential current trip function responds to fairly high levels of ground current within the differential protective zone. Outside the differential protective zone, ground relays associated with feeder breakers will actuate and isolate the ground overcurrent fault before the generator ground relay actuates. The ESF 4160 to 480 volt transformers are delta-wye and therefore will not pass a low voltage ground fault (less than 5 Kv) to the generator ground overcurrent protection system.

The low lube oil pressure trip function consists of three pressure switches such that at least two of the three switches must actuate to cause a diesel generator trip. The low lube oil trip function is pneumatically actuated with sufficient air bleed off time (appropriate 50 seconds if all three switches are open) to prevent spurious trips.

MP&L has evaluated and determined that the protective features of the generator ground overcurrent trip function and the low lube oil pressure trip function will not adversely affect the availability and reliability of the diesel generators. However, in order to further evaluate potential long-term enhancements to the subject trip systems MP&L commits to the following:

Prior to startup following the first refueling outage, MP&L shall evaluate and implement any design changes found necessary to delete diesel generator trips (other than engine overspeed and generator differential overcurrent) retained upon an ECCS actuation signal which do not utilize coincident logic.

- 2) (TSPS #373) The Division 3 bus does not have the same undervoltage protection when compared with Divisions 1 and 2. Divisions 1 and 2 have degraded voltage protection at 90% undervoltage and loss of voltage protection at 72% undervoltage. Division 3 has only loss of voltage protection at 72% undervoltage. A proposed solution is to provide prior to startup following the first refueling outage a second level of voltage protection for Division 3. The present design of Division 3 undervoltage protection is in compliance with the FSAR and General Electric Topical Report NEDO-10905. Appendix 3A and Section 8.3.1.2.1 of the FSAR discusses the MP&L commitment to Regulatory Guide 1.9 (3/10/71). Exception is taken in the FSAR to the regulatory guide's voltage and frequency limit (75% and 95% of nominal, respectively) during the initial loading transient. The HPCS system consists of one large pump and motor combination which represents more than 90% of the total load; consequently, limiting the momentary voltage drop to 25% and the momentary frequency drop to 5% would not significantly enhance the reliability of HPCS operation. However, the frequency and voltage overshoot

requirements of Regulatory Guide 1.9 are met. The HPCS motor and all HPCS auxiliaries except motor operated valves (MOVs) have overcurrent protection which will prevent damage from persistent undervoltage. The MOVs have a minimum 75% voltage operating capability by design specification. Considering design margin that is typically included, MOV operation in the 73% to 75% voltage range will occur with a high degree of confidence. The likelihood of the undervoltage being between 73% to 75% for a period long enough to damage the valve motors is extremely small. The only other equipment connected to the Division 3 bus that will be adversely affected by undervoltage is the Division 3 battery charger which is affected at less than 85% nominal. The Division 3 batteries will handle the DC load for at least four hours which will provide ample time to recognize undervoltage conditions. MP&L has evaluated the HPCS design and concludes that one level of undervoltage protection does not adversely affect the availability and reliability of Division 3 power supply. However, in order to enhance the Division 3 power supply, MP&L commits to the following:

Prior to startup following the first refueling outage, MP&L shall evaluate and implement any design changes found necessary to provide acceptable undervoltage protection for the Division 3 bus.

- 3) (TSPS #333) This problem sheet addresses the concern that the Division 3 HPCS diesel generator design does not incorporate an emergency override of the test mode that permits response to bona fide emergency signals and returns control of the diesel generator to the emergency standby mode. This design feature is incorporated on the Division 1 and 2 diesels, and is required by Position 1 of Regulatory Guide 1.108 (August 1977) as referenced in Position 6 of Revision 2 of Regulatory Guide 1.9 (December 1979), and Section 5.6.6.2.(1) of IEEE Std. 387-1977 as referenced in Position 7 of Revision 2 of Regulatory Guide 1.9. These are not, however, the design requirements for the Division 3 diesel generator. As referenced in the Final Safety Analysis Report (FSAR), Section 8.3.1.2 and Appendix A, the Division 3 HPCS diesel generator is designed in conformance with:
 - 1) Regulatory Guide 1.9 (3/10/71);
 - 2) Regulatory Guide 1.108 to the extent discussed in FSAR Section 8.3.1.1.4.2;
 - 3) IEEE Std. 387-1972 to the extent described in FSAR Section 8.3.1.2.1.b.18.

MP&L has evaluated the requirements of these applicable documents and determined the lack of the emergency override on the Division 3 diesel generator allows the design to remain in compliance with these codes-of-record. The lack of this emergency override design feature will not adversely impact the reliability or availability of the Division 3 diesel generator for the following reasons:

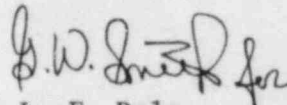
- 1) The small amount of time that the diesel generator will be in the test mode.
- 2) The low probability of the coincidental occurrence of a bona fide emergency signal and the existence of a test mode condition.
- 3) The overall high reliability of the Grand Gulf grid and offsite power supplies.

However, in order to enhance the design of the Division 3 power supply system, MP&L commits to the following:

Prior to startup following the first refueling outage, MP&L will evaluate and propose any necessary design changes required to incorporate an emergency override of the test mode for the Division 3 diesel generator.

Please contact this office if additional information is required.

Yours truly,



L. F. Dale

Director

WJH/AJS:lm

cc: Mr. J. B. Richard
Mr. R. B. McGehee
Mr. N. S. Reynolds
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