APR 27 1984

The Honorable Edward Markey
Chairman, Subcommittee on Oversight
and Investigations
Committee on Interior and Insular Affairs
United States House of Representatives
Washington, D.C. 20515

Dear Congressman Markey:

In your letter dated March 13, 1984, you expressed concern about problems identified at the Grand Gulf facility. The Commission and staff have also had concerns and have committed extensive resources to assure the correction of identified problems and the achievement of compliance with regulatory requirements. However, I assure you that the operation of Grand Gulf 1, as limited by the low power license, has not endangered the health or safety of the public.

The basic issues addressed by your questions have been raised and addressed by the staff in the ongoing Grand Gulf licensing process due to the fact that the staff has been implementing a planned program to closely monitor all licensee activities. The identification and meticulous followup of problems are essential elements of the overall licensing process. This is particularly important since Grand Gulf is the first nuclear plant for MP&L.

Specific problems associated with Technical Specifications and surveillance testing which the staff identified in the course of the licensing process have had corrective actions initiated by MP&L and the NRC staff not only to correct the individual problems but the generic aspects of the problems as well. NRC staff members have met with MP&L management on numerous occasions to ensure that corrective actions taken by MP&L were commensurate with the magnitude of the related problems and that such actions are implemented in a timeframe that will minimize their impact on the public.

Grand Gulf 1 is the first of the BWR-6 plants with a Mark III containment and, as you observed, is the largest single facility in thermal design to be licensed to date. The Technical Specifications for Grand Gulf 1 are unique, are more comprehensive, and more detailed than any BWR Technical Specifications ever issued. New regulatory requirements are generated on a continuing basis such that Technical Specifications by necessity have become more extensive, more explicit, and more stringent. It is particularly noteworthy that additional Technical Specification requirements were incorporated in the license as late as the fuel load date on July 1, 1982. The 1982 Technical Specifications are a living and changing document.

As you strongly implied in your letter, I acknowledge that the staff did not excel in certain important aspects of applying additional resources at an earlier date to the Technical Specifications issue. However, we are addressing this shortcoming by programmatic changes.

The above notwithstanding, the NRC's safety system functioned appropriately in that the weaknesses were identified by the staff and corrective actions, as well

APR 27 1984

as operational improvements, initiated and completed prior to any power operations that could have adversely affected the health and safety of the public. The Commission takes consolation in this demonstration of the regulatory system employed by the staff. Although, in this case, we certainly would have preferred all problems to have been identified earlier in the process, identification prior to operating over five percent power is, without question, acceptable from a safety standpoint.

Enclosure 1 addresses each of your questions, with individual's names included as you requested. I trust this letter is responsive to your request. I will, of course, be happy to provide further information as necessary.

Sincerely,

Nunzio J. Palladino
Chairman

Enclosures:
1. Answers to Specific Questions
2. Documents

APR 27 1984

ENCLOSURE 1

ANSWERS TO SPECIFIC QUESTIONS

Question

1. With respect to the errors identified in the Technical Specifications and surveillance procedures submitted to the NRC by MP&L, please indicate:

   a. the nature or types of errors;

   b. the cause(s) of the errors;

   d. why the NRC did not discover these errors prior to issuing a license;

   f. what actions the NRC staff took upon learning of these errors; and

   g. when and by what process the Commission was informed of the errors.

Response

1.a As of September 1983, the NRC received requests from MP&L for 205 changes to the Technical Specifications. These changes were summarized in a memorandum dated February 29, 1984, from William J. Dircks, Executive Director for Operations, to the Commissioners. The changes were grouped in four types: editorial or nomenclature corrections; consistency between Technical Specifications; conformance to as-built plant; and changes to the bases of the Technical Specifications.

MP&L, in a letter dated December 1, 1983, identified a number of areas in which problems had been identified with surveillance procedures. The following list identifies the nature and types of these problems. It is important to recognize that the NRC and licensee review process which leads to the identification of surveillance procedure problems is performed in parallel with development of the surveillance procedures. This is begun long before systems are completely installed, turned over to the licensee's operational staff, and available for walkdown or demonstration of technical adequacy. These initial procedures undergo a revision process to match them with the final system installation. Accordingly, required changes to these procedures are not necessarily "errors" in the licensee's program but rather a normal part of this iterative process.

(1) Procedures did not exist to perform some of the surveillances required by Technical Specifications;

(2) Procedures did not provide for testing all the equipment required;

(3) Procedures did not include specific acceptance criteria for channel checks, and other tests;

(4) Channel calibration procedures did not provide for checking the entire parameter sensing loop (pressure transmitter and trip unit) as required;

(5) Some equipment response times were not covered by procedures;

(6) Administrative Procedures did not provide for an effective program to ensure that surveillance procedures were revised to provide for the timely demonstration of compliance with the amended Technical Specifications;

(7) Some procedures contained acceptance criteria less conservative than Technical Specifications. For example, some instrument setpoint tolerances were not within the limits of Technical Specifications or were erroneously listed;

(8) Some procedures contained incorrect surveillance frequency requirements;

(9) Some procedures incorrectly stated and/or did not include the operational conditions for which the surveillance was applicable;

(10) Some steps were not provided in surveillance procedures to return safety-related valves and switches to "normal" or "as found" positions upon completion of tests when the positions were changed as a result of a surveillance; and

(11) Some procedures referenced a System Operating Instruction (SOI) or Integrated Operating Instruction (IOI) to perform a surveillance or sequence of steps; however, the SOI or IOI did not indicate how to actually perform the surveillance or sequence of steps to the desired end result.

1.b. The causes of the Technical Specification errors were inadequate attention to detail by the licensee and his contractors in drafting the Technical Specifications, and a less-than-thorough review of the draft Technical Specifications by MP&L and NRC. The cause of the inadequate surveillance procedures was a fragmented review process by MP&L. The review process did not include adequate technical reviews, independent quality reviews, and verification of the final approved Technical Specifications against procedures which had been developed from earlier draft Technical Specifications. There were very few programmatic controls over surveillance activities at the time of initial surveillance procedure preparation.

1.d. The errors in the Technical Specifications were not discovered because... (NRR to provide). The errors in the surveillance procedures were not discovered prior to licensing because the final version of the surveillance procedures could not be reviewed for correctness until the final version of the Technical Specifications, as issued in the facility low power operating license, became available. Two inspections of surveillance procedure compliance with Technical Specifications were conducted between license

issuance and the commencement of initial criticality. Both of these inspections in the areas of operations and fire protection pointed out numerous errors requiring correction prior to initial criticality. The NRC was assured by plant management that the errors had all been corrected prior to initial criticality. Subsequent to initial criticality a Regior II team inspection revealed the existance of additional surveillance procedure errors. The licensee's corrective action was evidently not sufficiently comprehensive.

1.f,g. The Grand Gulf Operating License, NPF-13, and associated Technical Specifications (TS) were issued on June 16, 1982, by the NRC. Actual fuel load began on July 1, 1982. Initial criticality at zero power was undertaken on August 18, 1982. Following criticality on that day, the plant was shut down and went into a major maintenance outage.

Shortly after issuance of the license Region II inspections were conducted which concentrated on the technical adequacy of plant procedures used to demonstrate compliance with the TS. Findings revealed that the procedures were not adequate to demonstrate compliance with the TS. Region II originally did not recognize the significance of the TS problem because it was assumed that the review effort put forth by the NRC licensing staff (NRR) in establishing the TS would have detected any major problems. There were numerous meetings during TS development between NRR and the licensee, some with Regional participation. Region II reviewed and commented on the draft TS in November 1981. Therefore, the inspection emphasis shortly after licensing was to ensure that the licensee was complying with TS and properly adhering to procedures. Important findings documented in Region II inspection reports during that period are summarized in the following paragraphs.

Subsequent to the issuance of a low power license, an inspection conducted during the period from June 16 to July 16, 1982, identified four examples of plant procedures which did not adequately implement surveillances required by the TS. Also, at about this same time, a separate inspection identified six examples of TS requirements which had not been incorporated into the surveillance procedure program.

During the initial criticality on August 18, 1982, the reactor was operated for approximately one hour at essentially "zero" power. In this mode, many TS requirements appropriate for normal power operation are not applicable. NRC inspectors were present during criticality and closely observed licensee actions and plant status to ensure that all applicable TS were met. No discrepancies were observed during initial criticality. However, as discussed in the response to question 2, two surveillances involving operability of the scram discharge volume drain and vent valves, and operability of fire rated walls, floors/ceilings, and fire dampers were identified, which had not been performed during this initial criticality.

Mr. James P. O'Reilly, Regional Administrator, Region II, met with MP&L on July 26, 1982, at the MP&L corporate offices to discuss the number of problems identified with procedures and the Corporate Safety Review Committee's role in the safe operation of Grand Gulf. Mr. O'Reilly emphasized to MP&L the necessity of conducting a meticulous review of procedures to ensure that TS requirements were fully implemented by procedures.

During the period of September 27 to October 8, 1982, a special team inspection was conducted by Region II to verify: that changes to TS were promptly incorporated into procedures and properly implemented; that surveillance procedures were in place to implement all TS requirements; and that surveillance procedures were technically adequate. The findings, as described below, identified a number of issues.

The conclusions of this inspection were as follows:

- Some technical specification surveillances or FSAR commitments were not incorporated in appropriate plant procedures.

- Technical Specification requirements were found to be misstated or incorrectly incorporated into surveillance documents.

- Technical Specification requirements were not being followed in those instances where MP&L had requested a Technical Specification amendment but it had not yet been approved by NRR.

- Technical Specifications contained some requirements for hardware that was not applicable to Grand Gulf.

Only one example was identified where TS described hardware was not installed at Grand Gulf. The equipment was not required to have been installed for the system design used at Grand Gulf. The system in use at Grand Gulf was correctly designed and built. The error was in the Technical Specifications which refered to explosive squib valves used in earlier designs of BWR containment systems and should have been deleted by the licensee or NRC during the development of the Grand Gulf Technical Specifications.

This represents the only case known to Region II in which a safety feature was prescribed in TS and was not physically installed at Grand Gulf. Subsequent review of the TS turned up numerous numerical errors, inconsistencies, and ambiguities in the TS, but no error involving operations for which associated equipment was not installed.

These findings caused a shift in inspection emphasis to ensure that the TS were error free and compatible with actual plant design. Once NRC came to the recognition that there were numerous errors in the TS, the following actions were taken.

An enforcement conference was held with MP&L on October 14, 1982, in the Region II office to further discuss these findings. The corrective actions agreed on during the enforcement conference were documented in a Confirmatory Action Letter (CAL) from Region II to MP&L on October 20, 1982. The CAL stated that MP&L has taken or will take the following actions prior to the achievement of the next reactor criticality:

(1) Ensure that all surveillance procedures are technically adequate to establish an effective program to incorporate, control, and implement regulatory requirements. These actions are to include technical specification surveillance, ASME Section XI Code and 10 CFR 50 Appendix J requirements;

(2) Prepare and submit license amendment requests to the NRC, where necessary, to correct administrative and technical deficiencies in the technical specifications;

(3) Conduct formal training of operating and staff personnel on the proper implementation of technical specification requirements, including procedure compliance;

(4) Establish a formal Quality Assurance audit program to assure compliance with the above regulatory requirements; and

(5) Conduct a review by the Off-site Safety Review Committee, of the adequacy of actions described above to assure compliance with regulatory requirements. MP&L will formally notify Region II when all actions have been completed.

During this four month period from license issuance in June to full recognition of the TS deficiencies, the plant did not operate, with the exception of the brief initial criticality on August 18, 1982, and posed no threat to the public health and safety. Also, the plant did not operate again until the licensee had completed activities in response to the October 20, 1982 CAL. The plant remained in cold shutdown for completion of construction of those systems required for full power operation, review and revision of the TS, and review and rewrite of the surveillance procedures, until September 1983.

Question

2. Did Grand Gulf reach criticality and operate without performing required and appropriate surveillance tests? If yes, indicate:

   a. for what periods of time this occurred;

   b. whether this took place with the knowledge and/or approval or concurrence of any member of the NRC staff and if so, whom;

   c. what, if any, NRC regulations were violated; and

d. the safety significance.

Response

2. During initial criticality and the approximately one hour period of open vessel testing on August 18, 1982, two Technical Specification Surveillance Requirements involving operability of the scram discharge volume drain and vent valves, and operability of fire barriers were not met.

a. The surveillance requirement related to scram discharge volume operability was not met throughout the period of the initial approach to criticality and open vessel physics testing; a period of less than two days. The licensee believed that previously performed pre-operational tests had met the surveillance operability requirements. It was later determined that valve closure times had not been tested, however, and therefore the complete operability surveillance had not been completed.

The surveillance requirement related to fire barrier operability was required to have been performed in June 1982, when the Technical Specifications were issued. Region II inspectors identified in July 1982 that certain cyclical fire barrier operability surveillances had not been implemented by surveillance procedures. In response to this finding, the licensee reviewed and documented the position that the successful completion of preoperational tests on these fire barriers, which were similar to the required operability surveillances, satisfied the Technical Specification required operability surveillances. Procedures were written, reviewed and performed during a subsequent performance cycle to meet the Technical Specification operability surveillance.

b. Although NRC inspectors witnessed the initial criticality, the two missed surveillances were not in the sample surveillances audited by NRC. The failures to perform the two surveillance requirements did not take place with the knowledge and/or approval or concurrence of any member of the NRC staff.

c. Technical Specification surveillance requirements concerning verification of the operability of the scram discharge volume drain and vent valves, and verification of the operability of fire barriers, were not met.

d. Although the vent and drain surveillance was not performed at the intended stage of plant startup, the valves had earlier been demonstrated to be operable. Failure to perform surveillance requirements involving the operability of certain fire protection features, presented the remote possibility that had a fire occurred, it could have spread to areas which may contain redundant or additional safety-related equipment. Failure to perform these two surveillances had negligible safety significance, but did reveal that the MP&L management

systems to control surveillances were inadequate in that they did not prevent the surveillances from being missed.

Question

3. I have been informed that MP&L was exempted by the NRC from performing approximately 30 pre-operational tests. If true, please indicate what was the technical basis for providing these exemptions.

   a. If these tests had been performed rather than exempted, would any of the technical specifications or surveillance procedure errors have been discovered prior to criticality?

   b. Who at NRC is responsible for granting these exemptions and was a "no signficant hazards consideration" determination made by the staff for some or all of these tests? Provide a list off all those that concurred in these decisions along with the Official Record Copy of the document(s) authorizing these exemptions.

Response

3. You have been misinformed regarding exemptions to preoperational test requirements at Grand Gulf. The Grand Gulf Nuclear Station, Unit 1, facility operating license number NPF-13, dated, June 16, 1982, specifically identified nine preoperational tests and 19 post construction acceptance tests which MP&L was required to complete to the satisfaction of the NRC prior to exceeding five percent power. It is incorrect to characterize these tests as having been exempted from performance when in fact a requirement for satisfactory performance of the tests was included as a part of the facility operating license. These tests were deferred at the request of MP&L as part of their Phased Startup program. A determination was made by the NRC staff that satisfactory completion of all tests prior to the facility exceeding five percent power, would, for the system being tested, demonstrate satisfactory performance and would not impact the health and safety of the public or result in any environmental impacts other than those evaluated in the Final Environmental Statement.

   The basis for this conclusion by the staff rested upon the fact that not all plant systems are used in attaining criticality and, in fact, many systems are not placed into operation until after the facility has exceeded a five percent power level. For example, certain turbine generator, feedwater control, and steam systems fall into this category. Additionally, because significant levels of radioactive materials would not have accumulated in the plant, due to the lack of facility operation, certain radiological control systems were also not required prior to operation above five percent power.

   Because the preoperational and acceptance tests are performed as a series of tests independent of the routine surveillance tests, it is doubtful that early performance of these tests would have revealed technical specification or surveillance procedure errors. The requirement that these tests be

performed by MP&L prior to exceeding a power level of five percent was a license condition.

Since the tests were being delayed and not deleted, and the tests were included as a part of the license, no license amendment was involved and a formal "significant hazards consideration" determination was not required or documented. Therefore, a list of those individuals, as you requested, that concurred in an exemption is inappropriate as no exemption was granted.

Question

4. List those members of the NRC staff that approved or concurred in the approval of the erroneous technical specifications and surveillance procedures submitted by MP&L for Grand Gulf. Specifically requested is the Official Record Copy of the document(s) indicating such approval or concurrence.

Response

4. The NRC has not formally approved or concurred in surveillance procedures at Grand Gulf or any other facility. Such procedures are not submitted by licensees for review. However, inspections related to technical adequacy are conducted on a selected basis, but only after such procedures are reviewed by licensee safety committees and are implemented. NRC approves and issues the operating license which includes the Technical Specifications (TS) as Appendix A to the license. The TS impose requirements on the licensee to establish, implement, and maintain written procedures to accomplish safety related activities. The licensee's staff prepares proposed procedures and submits them for review to the licensee's On-site Safety Review Committee. That committee, when satisfied with a procedure, recommends to plant management that the procedure be approved. Once approved by the appropriate level of plant management, the procedure is placed in use.

It would be inefficient and inappropriate for the licensee to have to submit for NRC approval all of the many plant procedures. The requirement is established by the NRC as to what types of procedures are required and the methods and levels of review and approval necessary. The licensee is then responsible to meet these requirements of the TS.

As part of the NRC inspection program conducted by the Regional Offices a sample of the plant procedures are reviewed for technical adequacy prior to plant licensing and periodically throughout the life of the plant. Every inspection includes verification that plant personnel are following procedures in the area of inspection concentration. Each inspection also includes an evaluation of the technical adequacy of plant procedures in the area of inspection concentration.

A Region II inspection during the period of April 19 through May 14, 1982 documents a team inspection of the Grand Gulf procedures while they were under development, prior to plant licensing. The report was critical of

certain aspects of the procedures and the procedure development methods. Prior to licensing, MP&L informed Region II that these matters had been corrected. A rereview of a sample of the procedures prior to licensing supported that conclusion. However, following issuance of the license a series of inspections revealed various other inadequacies in the plant surveillance procedures. This series of negative findings led to an enforcement conference and a Confirmatory Action Letter in October 1982, requiring a comprehensive rereview of the plant surveillance procedures prior to recriticality as described in the response to question 1.f.

Although there were problems with the procedures, even after license issuance there were no procedure defects identified which would cause an unsafe condition to exist which would endanger the health and safety of the public. The NRC inspection program accomplished its goal through the sampling process to identify problems and ensure that they are corrected. (NRR input to follow on TS.)

Question

5. How many NRC personnel actually review technical specifications and surveillance procedures submitted by applicants and licensees? Please indicate the budget and staff power assigned to this task for each of the past five years. Indicate also whether the NRC staff and Commission believe the present funding, staffing and organization of this task is adequate.

Response

5. Review of the technical specifications which are submitted by the applicant are performed by the NRR and Regional staffs. The effort expended on this task by the Regional staff is not budgeted or accounted for as a separate line item. Therefore, the staff manpower assigned to this task can only be estimated. For each applicant, the draft technical specifications are reviewed by the Senior Resident Inspector (approximately one man-week), regionally based specialist inspectors (approximately one man-week), and to a much lesser extent the regional based resident inspector's supervisor or project engineer. In addition, other senior resident inspectors, stationed at a similarly designed plant, and who have operating experience, may contribute to this review. In the case of Grand Gulf, the first BWR-6 with a MK III containment, because there was no comparable facility already in operation, this supplemental review by other Senior Resident Inspectors was not performed.

As discussed in question 4, above, surveillance procedures are not submitted by the applicant to the NRC. Rather, the procedures, following their review and approval by the licensee, are normally reviewed onsite by the resident and regional inspection staffs as a part of the routine review of selected plant activities.

The Region II funding, staffing, and organization of this task is adequate to perform the existing program. Additional program requirements, which recognize the efforts now being expanded on plants approaching the licensing stage, are being evaluated.

Question

6. It is my understanding that MP&L agreed to discontinue operations at Grand Gulf in October 1982 in accordance with an NRC Confirmatory Action Letter issued by NRC's Region II office. Please explain:

   a. the reasons why the NRC staff asked MP&L to discontinue operations in October 1982;

   b. why the license was not revoked or suspended instead;

   c. when, why, and by whose authority MP&L was allowed to continue operations (please provide the Official Record Copy of the document authorizing the return to operations); and

   d. what errors have been discovered since MP&L has continued operations and why these errors were not discovered after the issuance of the Confirmatory Action Letter and prior to continued operation.

Response

6.a As stated in the response to Question 1, the Grand Gulf Operating License, NPF-13, and the associated Technical Specifications (TS) were issued on June 16, 1982, by the NRC. Actual fuel load began on July 1, 1982. Initial criticality at zero power with an open vessel was undertaken on August 18, 1982. Following criticality on that day, the plant was shut down and went into a major maintenance outage. Before the license was issued, NRC and MP&L had agreed to this course of action as part of the Phased Startup program requested by MP&L. Sufficient plant systems and equipment were completed to allow the brief criticality at zero reactor power with complete safety. Following that criticality an extended maintenance outage was begun to complete construction of the balance of plant equipment which were not required until full power operation, and preoperational testing, as required by the plant license. Until this work was completed, the licensee was restricted by the plant license from operating the plant. Due to these overriding license restraints, it is not technically correct that the NRC staff asked MP&L to discontinue operations in October 1982.

However, as explained in the response to Question 1, Region II issued a Confirmatory Action Letter (CAL) on October 20, 1982, to formally document and recognize NRC's concerns and MP&L's further commitment to review the TS and surveillance procedures, and make appropriate changes prior to further plant operation. Thus, the CAL placed a firm regulatory restraint on operation.

6.b. The NRC staff concluded in October 1982, as it still concludes today, that license suspension or revocation would be a drastic punitive action and is not warranted.

The NRC had imposed firm licensing restraints to maintain the plant in cold shutdown while the plant was in a maintenance outage. Region II personnel inspected the licensee on a continuing basis to verify operation in accordance with the operating restraints contained in the license. Although fuel was loaded in the reactor, there was no significant fission product inventory and the core was continuously monitored. No credible postulated conditions or sequence of events could have endangered the health and safety of the public during this time period.

The NRC staff therefore concludes that there is no reason, other than to take punitive action, to revoke or suspend the Grand Gulf license. Such an action would have been unrelated to safety and would have subjected the licensee and the public utility users to unnecessary distractions and delays. The NRC staff continues to believe that Grand Gulf is a soundly designed and constructed nuclear power plant. What is required to begin operations is adequate licensee management attention to correct identified deficiencies and their root causes.

6.c. When the licensee judged that all the actions required by the license and the CAL were complete, Region II was so informed. As required by the CAL, MP&L kept Region II informed by a series of letters as required actions were completed. MP&L letters of August 29 (AECM-83/0431), September 7 (AECM-83/0552), September 13 (AECM-83/0580), and September 22, 1983 (AECM-83/0611), collectively stated that all required actions were accomplished for operations up to 5% power and committed to milestone dates for completion of the remaining actions. Region II conducted several inspections to audit the licensee actions which supplemented the ongoing monitoring of general activities by the resident inspectors. A Region II inspection during the period August 15 through September 1, 1983, documents a team inspection which examined operational readiness.

On September 23, 1983, Region II issued a Confirmation of Concurrence letter to MP&L stating the NRC concurrence with the planned schedule for recriticality and documenting certain other actions agreed to by MP&L. That letter which was signed by Mr. James P. O'Reilly, removed the restraints imposed by the October 20, 1982 CAL and imposed certain other restraints on future actions. The operating license allowed recriticality and operation up to 5% power upon completion of all required conditions and surveillance tests for low power operations.

The Grand Gulf reactor was again taken critical on September 25, 1983 and the planned testing conducted at less than 5% power. Low power operation and testing continued throughout October 1983 and was witnessed by various Region II inspectors. In the judgment of Region II, these operations were conducted in a safe, deliberate and professional manner, and were very successful. Only three unplanned scrams occurred during this period which is far less than is typical for facilities in this phase of startup.

Following completion of the planned testing at less than 5% power, the reactor was shut down in early November 1983 to correct minor problems revealed by low power testing and to accomplish the operator recertification program described in the response to Question 8. The recertification involved extensive training of all licensed operators on all plant systems of safety importance, retesting by MP&L, and reexamination of all the operators by NRC reactor operator license examiners.

6.d. After issuance of the CAL in October 1982, Region II understood that MP&L would conduct a thorough review of all aspects of the Technical Specifications, identify all errors and discrepancies, and submit to NRR a request to change TS where appropriate. MP&L, however, now states that their review concentrated on the surveillance test areas of TS, and therefore some of the other TS facets (e.g., limiting conditions for operation) may not have received a thorough review.

NRC understood that MP&L's review was complete, comprehensive, and thorough. Region II audited the TS during the August 1983 operational readiness inspection prior to recriticality and identified that the surveillance procedures were adequate to verify compliance with TS.

MP&L's 1982-83 review of TS identified 205 TS changes that needed to be made. These changes, as discussed in answer 1.a, above, were grouped into four types. These four types were then classified for action into three priorities by safety significance and plant operating condition. These were forwarded to NRR for review in a series of submittals ending September 9, 1983. Category 1 and 2 changes were reviewed by NRR and appropriate changes made prior to recriticality. Category 3 changes included editorial items, nomenclature, clarification, and other such changes of less immediate concern that were not required for recriticality or low power testing. A mutually agreeable schedule was established for resolution of the Category 3 items.

During the operator recertification period however, the licensee continued to identify inconsistencies and ambiguities in the TS. These items were compiled, tracked, and evaluated in preparation for future change requests. To the NRC staff's knowledge, none of these items represent errors in the TS that could cause a significant safety hazard.

To gain further confidence in the adequacy of the TS a further review was done by NRC in February 1984. NRR had consultants from Idaho National Engineering Laboratory (INEL) compare the Grand Gulf TS, the Final Safety Analysis Report (FSAR), and the NRC Safety Evaluation Report (SER) for consistency in certain selected TS areas. In parallel, Region II conducted a special team inspection at the plant to compare the same TS areas to the as-built plant design.

The INEL review identified several discrepancies which will be corrected by future revisions to the TS, FSAR and SER. In the judgement of the NRC staff, none of those items could have caused an unsafe operating condition.

The Region II special team inspection identified several problems. By agreement with NRR, ten sections of the TS were audited. No discrepancies were identified in two areas. In four areas, errors were found in the TS, along with several TS items that require additional follow-up to determine final resolution.

Questions requiring resolution regarding acceptability of the TS were identified in each of the remaining four areas. These findings were presented to the licensee in an exit interview on February 24, 1984 at the Grand Gulf site. The inspectors were made aware that approximately 50% of these errors had been identified by MP&L and action was in progress for resolution. MP&L has identified numerous other items in the TS that need clarification or correction.

Based on these findings, Region II concludes that previous MP&L reviews, although substantial, were not totally adequate to correct all errors and deficiencies in the TS. However, none of these items, in the judgement of the NRC staff, were of such a nature as to cause a significant hazard to the health and safety of the public.

Because the sampling inspection identified continued TS accuracy issues, the NRC has requested MP&L to establish a task force to perform another review of the TS to identify and resolve any remaining TS discrepancies. The task force will include members from Bechtel (the Grand Gulf constructor), General Electric (the reactor designer), and members of the plant operations staff holding Senior Reactor Operator licenses. The scope of this review includes the entire TS and associated surveillance procedures.

In parallel with the MP&L effort, the NRR staff is conducting another independent review of the Grand Gulf TS. Prior to consideration of issuance of a full power license for Grand Gulf, all items identified by either review will be evaluated for safety significance by the NRC staff and TS changes made if appropriate. All items of safety significance in the judgement of the NRC staff will be corrected in the Grand Gulf TS prior to issuance of a full power license. Editorial and administrative changes will be reviewed and approved as soon as possible, consistent with other NRC safety significant priorities.

The reason that these current items were not identified and addressed after the issuance of the CAL and prior to recriticality is due to the limited scope of the TS review by MP&L and the misunderstanding between MP&L and NRC on the scope of the CAL. The NRC staff thought that MP&L was performing a comprehensive and detailed review of all aspects of the TS as clearly intended by the words of the CAL. Many of the TS changes that MP&L requested as a result of their review were to change Limiting Conditions for Operation (LCO) and applicability statements to make the TS conform to the as-built plant. Therefore, it appeared to the NRC staff that the licensee was performing a comprehensive review of all aspects of the TS.

During the operational readiness inspection, Region II inspectors examined many surveillance procedures and associated LCO statements in TS. There were no significant discrepancies identified, although the inspection sample was small relative to the total TS. These facts led the NRC staff to conclude that prior to recriticality, all TS errors were identified and either corrected or determined not to be of safety significance or not required for low power testing; thus they were of lower priority. Although new TS descrepancies have been identified, none of these descrepancies, in the judgement of the Region II staff, have an impact on public health and safety.

Question

7. Considering the serious problems identified with Trans-America Delaval (TDI) diesel generators at Shoreham in the summer of 1983, what was the technical basis for allowing Grand Gulf to operate at low power in September 1983? Additionally, was the cause of the September 4, 1983 diesel generator fire at Grand Gulf in any way related to the generic problems identified with Trans-America Delaval diesel generators at Shoreham?

Response

7. MP&L was fully informed by the NRC of the diesel engine crankshaft failures at Shoreham. Region II and MP&L representatives visually inspected the crankcase of one of the Grand Gulf TDI diesels in August 1983 and observed no abnormal conditions. Throughout September, MP&L and Region II held numerous technical discussions to agree upon the relevance of the Shoreham failures to Grand Gulf, the future course of action, and the acceptability of proceeding with testing.

NRC determined that it was acceptable to continue low power testing at Grand Gulf during October for the following reasons. Although made by TDI, the Grand Gulf Division I and II diesels are a V-16 design. This design is more substantial than that at Shoreham and is also a different configuration. No evidence of crankshaft failure had been observed at Grand Gulf or any other TDI V-16 engine. This crankshaft design has been successfully operated in many applications for several years with no crankshaft failures. Prior to the Grand Gulf recriticality in October, all evidence of the Shoreham failure pointed toward a design error by TDI on the specific Shoreham crankshaft design. The Grand Gulf diesels were run for seven consecutive days, as agreed to by MP&L and Region II, to demonstrate reliability.

The diesel engine fire at Grand Gulf on September 4, 1983, was caused by a broken fuel line between the low pressure fuel pump and the fuel distribution header. The licensee conducted a metallurgical examination of the broken fuel line and determined it to be a cyclic fatigue failure. The probable cause was excessive vibration of the fuel line.

The fuel line was replaced and, with the concurrence of TDI, a support bracket was installed on that line on both Grand Gulf diesels to reduce vibration. The vendor manuals from TDI pictured such a bracket on the V-16

engine but none was supplied on either Grand Gulf engine. TDI has no explanation for the missing bracket.

The comprehensive list of TDI problems developed by the TDI owners group had not been compiled prior to the October recriticality. However, each problem, as identified, was addressed by MP&L and prompt corrective action taken. NRC believed then, and continues to believe that there was no safety hazard associated with operation of Grand Gulf at low power with reliance on the installed TDI diesels.

Also, a determination must be made prior to operation above 5% power that the TDI diesels at Grand Gulf are sufficiently reliable to support power operation. NRR is currently reviewing the issue, and NRC is actively interacting with MP&L to resolve the issue. MP&L has installed three gas turbines on site to supplement the TDI diesels if needed for emergency power. NRC is closely reviewing the acceptability of the Grand Gulf emergency power capabilities and will require the existence of an acceptable configuration prior to the granting of a full power license.

Question

8. In a March 10, 1984 telephone conversation with the staff of the Subcommittee, Harold Denton, Director of NRC's Office of Nuclear Reactor Regulation, made remarks that my staff has related as follows:

   -- The NRC staff believes that the training records of some of the operators at Grand Gulf were falsified.

   Please comment on the above characterization of what are apparently the views of the NRC staff. Additionally, please explain:

   c. What the findings are of the NRC's Office of Investigations inquiry into the possible falsification of operators' qualifications (please provide a copy of the OI report).

Response

8. As indicated in the responses to questions 8.c and 10.b, below, the NRC staff believes that the erroneous information provided on the applications constitutes a material false statement.

8.c. In three instances (September, 1981; March, 1982; and May, 1982) certifications were provided by MP&L on operator license applications which contained false or incomplete information. This occurred on a total of 46 applications. These discrepancies were apparently caused by ineffective management control by MP&L over the operator training program at the Grand Gulf Station. The NRC investigation concluded that a contract worker inserted false information on operator license applications with the knowledge of one of the MP&L employees, who was an operator temporarily acting in a supervisory role, and who corrected his own application. Other than the above, no information was found which indicated that the operator applicants were

aware of the discrepancies when they signed the applications. The MP&L certifying official, though negligent in his review of the certifications for accuracy, was apparently unaware of the false or inaccurate information. This matter has been referred to the Department of Justice for their evaluation.

Based on the above, the operator training program was questioned by Region II. Accordingly, a recertification program was required by NRC and then implemented by MP&L. The program to recertify licensed operators included an extensive plant walk through and oral examination by the utility of all licensed operators and additional training in the areas of identified weaknesses. This specific program began in November 1983, and was completed in February 1984. The recertification program included an individual examination of each licensed operator on each of 68 systems listed on the Grand Gulf licensed operator qualification card. These examinations were monitored by Mississippi Power and Light, representatives of two other utilities, the Nuclear Steam Supply vendor (General Electric), and NRC. At the completion of this examination process, the records of the licensed operators were reviewed by a Grand Gulf recertification board. The board consisted of Grand Gulf plant management. The board examined operator training records and the results of the examinations, and orally examined operators as necessary.

Upon completion of this recertification process, the NRC independently reexamined these licensed operators. Twenty-three of the twenty-six operators examined by NRC passed. The twenty-three operators provide sufficient staff for full power operation. The three operators who failed have been removed from licensed duties as confirmed by NRC letters dated February 29 and March 23, 1984.

The NRC is now reviewing and evaluating the Office of Investigation's report for enforcement action. Escalated enforcement action in relation to the falsification of operator license applications has been prepared by the staff but not yet reviewed by the Commission. As previously noted, this matter has been referred to the Department of Justice for further evaluation.

Question

9. Given the large number of errors identified in the technical specifications and surveillance procedures, and considering the fact that reviews and subsequent re-reviews by the licensee, contractors and the NRC have all been inadequate, is the Commission going to require a 100 percent re-review of the FSAR, the SER and the technical specifications? If not, please explain why. Additionally, please indicate what, if any, errors have been identified in the FSAR or the SER and their significance.

Response

9. The Commission does not intend to require a 100 percent re-review of the FSAR, the SER and the technical specifications. The extensive reviews performed by the licensee and audited by the NRC staff, as discussed in responses 1 above, and 11 below, will assure that the public health and safety are maintained. As discussed in question 6.d, above, the INEL study and Region II inspections have highlighted certain descrepancies between the TS, FSAR and SER. These items are currently being independently reviewed by MP&L and NRR for resolution.

Question

10. The Commission's regulations at 10 CFR 50.100 state that a license may be revoked or suspended "for any material false statement in the application for a license or in the supplemental or other statement of fact required of the applicant", or, because of "conditions revealed...that would warrant the Commission to refuse to grant a license on an original application..."

    a. Does the Commission consider that the erroneous technical specifications and surveillance procedures submitted by MP&L for Grand Gulf constitute either a material false statement or a false statement of fact?

    b. Does the Commission consider that the information submitted by MP&L concerning the qualifications of operators at Grand Gulf constitutes a material false statement?

Response

10.a. The Commission does not consider that the erroneous technical specification submittal constituted either a material false statement or a false statement of fact. The technical specifications are submitted to NRR for review of adequacy and subsequent approval. If they were expected to be error free, no review by NRR would be necessary.

10.b. The NRC staff does consider the erroneous information provided on the operator applications to be a material false statement. The amount of training and evaluation provided for operators by MP&L was overstated on license applications to the extent that the NRC would not have issued licenses to the operators at that time if the discrepancies had been known. As discussed earlier, strong enforcement action is pending.

Question

11. In light of the errors discovered in the information submitted to the NRC for the Grand Gulf low power license, what, if any, steps does the Commission plan to take in order to establish that MP&L has the management integrity and management competence required to operate Grand Gulf?

Additionally, please specify what the Commission presently requires of MP&L before it will vote on the proposed full power license.

Response

11. The NRC staff will continue to inspect in detail the activities of the licensee at Grand Gulf. Matters of safety significance in which management attention is needed to achieve resolution will be promptly brought to the attention of the highest levels of MP&L management. The Region II Administrator has frequently met during the last two years with the top management of MP&L as well as meeting with the President of Middle South Utilities to discuss problems at Grand Gulf. These meetings have produced positive changes in the problem areas identified in your letter and they will be repeated without hesitation when needed.

Since the discovery of the identified problems, Mississippi Power and Light has made significant management and personnel changes. For example, the Plant Manager has been replaced by the Assistant Plant Manager - Operations, who has previous nuclear power experience at two TVA nuclear facilities. An Assistant Plant Manager for reactor operations was recently hired. This individual was licensed as a Senior Reactor Operator at Georgia Power's Hatch Nuclear Power Plant and had previous operational experience in a responsible position with the Navy nuclear power program. These management personnel changes have enhanced plant management integrity and competence at the plant level.

Recently, a senior executive with considerable nuclear experience was transferred from another nuclear facility owned by Middle South Utilities (Arkansas Power and Light) to become the President of MP&L. A new Vice President for Nuclear Operations was also assigned to MP&L approximately one year ago. This individual has had experience with Middle South Utilities and with the Navy's nuclear power program. Additionally, the former Manager of Nuclear Operations at TVA is a special corporate consultant. This additional nuclear management experience at the corporate level of MP&L gives increased confidence that management capabilities are acceptable and will continue to improve.

Mississippi Power and Light Company has also taken steps to substantially expand and strengthen management controls in the operator staffing and training area, and to recertify all operators performing licensed duties. Management controls changes included elevating the training function to report directly to an Assistant Plant Manager, consolidating the training staff, assigning additional personnel to the training department, establishing a special financial incentive program to improve the staff retention rate, and adding to the staff a Corporate Nuclear Human Resource Manager responsible for increasing the number and level of competence of personnel entering the training pipeline. A number of management personnel changes have also been made including assignment of an additional Assistant Plant Manager who is responsible for training, and the assignment of a new supervisor of operations training.

Before issuing a full power license to Grand Gulf, the Commission will require that the current TS review be completed by MP&L and all items be resolved as described in the response to question 6.d. above. The NRC staff must concur in the resolution of every item prior to proceeding with power escalation. Additionally, before issuance of a full power license, the NRC will resolve the question of TDI diesel generator reliability and acceptability of on site emergency power sources at Grand Gulf.

It is to be noted that there is a planned, step by step power ascension test program that will be implemented under the close scruitney of the staff, if higher power operations are authorized. Also, the NRC is already committed to perform a special operational readiness inspection at Grand Gulf following the successful completion of testing up to a 50% power plateau.

Markey Q7

Draft

QUESTION 7. Considering the serious problems identified with Transamerica Delaval (TDI) diesel generators at Shoreham in the summer of 1983, what was the technical basis for allowing Grand Gulf to operate at low power in September 1983? Additionally, was the cause of the September 4, 1983, diesel generator fire at Grand Gulf in any way related to the generic problems identified with Trans-America Delaval diesel generators at Shoreham?

RESPONSE

MP&L was fully informed by the NRC of the diesel engine crankshaft failures at Shoreham. Region II and MP&L representatives visually inspected the crankshaft of one of the Grand Gulf TDI diesels in August 1983 and observed no abnormal conditions. Throughout September, MP&L and Region II held numerous technical discussions to agree upon the relevance of the Shoreham failures to Grand Gulf, the future course of action, and the acceptability of proceeding with testing.

NRC determined that it was acceptable to continue low power testing at Grand Gulf during October for the following reasons:

Markey/EDO
May 10, 1984

- Although made by TDI, the Grand Gulf Division I and II diesels are a V-16 design which is different from the Shoreham design.
- In addition to these diesels being a different configuration (Shoreham diesels are a straight-eight design) the Grand Gulf diesels have a larger crankshaft.
- No evidence of crankshaft failure had been observed at Grand Gulf or any other TDI V-16 engine.
- This crankshaft design has been successfully operated in many applications for several years with no crankshaft failures.
- Prior to the Grand Gulf recriticality in October, all evidence of the Shoreham failure pointed toward a design error by TDI on the specific Shoreham crankshaft design.
- The Grand Gulf diesels were run for seven consecutive days to demonstrate their reliability.

The comprehensive list of TDI problems developed by the TDI owners group had not been compiled prior to the September 1983 recriticality. However, each problem, as identified, was addressed by MP&L and prompt corrective action taken. NRC believed then, and

Markey/EDO
May 10, 1983

continues to believe that there was no safety hazard associated with operation of Grand Gulf at low power with reliance on the installed TDI diesels.

The diesel engine fire at Grand Gulf on September 4, 1983, was caused by a broken fuel line between the low pressure fuel pump and the fuel distribution header. The licensee conducted a metallurgical examination of the broken fuel line and determined it to be a cyclic fatigue failure. The probable cause was excessive vibration of the fuel line.

The fuel line was replaced and, with the concurrence of TDI, a support bracket was installed on that line on both Grand Gulf diesels to reduce vibration. The vendor manuals from TDI pictured such a bracket on the V-16 engine but none was supplied on either Grand Gulf engine. TDI has no explanation for the missing bracket. The absence of the brackets is indicative of TDI generic quality assurance problems.

Markey/EDO
May 10, 1984

Markey Question 7

Draft

Response

7. MP&L was fully informed by the NRC of the diesel engine crankshaft failures at Shoreham. Region II and MP&L representatives visually inspected the crankcase of one of the Grand Gulf TDI diesels in August 1983 and observed no abnormal conditions. Throughout September, MP&L and Region II held numerous technical discussions to agree upon the relevance of the Shoreham failures to Grand Gulf, the future course of action, and the acceptability of proceeding with testing.

NRC determined that it was acceptable to continue low power testing at Grand Gulf during October for the following reasons. Although made by TDI, the Grand Gulf Division I and II diesels are a V-16 design. This design is more substantial than that at Shoreham and is also a different configuration. No evidence of crankshaft failure had been observed at Grand Gulf or any other TDI V-16 engine. This crankshaft design has been successfully operated in many applications for several years with no crankshaft failures. Prior to the Grand Gulf recriticality in October, all evidence of the Shoreham failure pointed toward a design error by TDI on the specific Shoreham crankshaft design. The Grand Gulf diesels were run for seven consecutive days, as agreed to by MP&L and Region II, to demonstrate reliability.

The diesel engine fire at Grand Gulf on September 4, 1983, was caused by a broken fuel line between the low pressure fuel pump and the fuel distribution header. The licensee conducted a metallurgical examination of the

broken fuel line and determined it to be a cyclic fatigue failure. The probable cause was excessive vibration of the fuel line.

The fuel line was replaced and, with the concurrence of TDI, a support bracket was installed on that line on both Grand Gulf diesels to reduce vibration. The vendor manuals from TDI pictured such a bracket on the V-16 engine but none was supplied on either Grand Gulf engine. TDI has no explanation for the missing bracket.

The comprehensive list of TDI problems developed by the TDI owners group had not been compiled prior to the October recriticality. However, each problem, as identified, was addressed by MP&L and prompt corrective action taken. NRC believed then, and continues to believe that there was no safety hazard associated with operation of Grand Gulf at low power with reliance on the installed TDI diesels.

Also, a determination must be made that the TDI diesels at Grand Gulf are sufficiently reliable to support nuclear plant operation. NRR is currently reviewing ~~this~~ the issue, and NRC is actively interacting with MP&L to resolve ~~this~~ the issue. MP&L has installed three gas turbines on site to supplement the TDI diesels if needed for emergency power. NRC is closely reviewing the acceptability of the Grand Gulf emergency power capabilities and will require the existence of an acceptable configuration prior to the ~~plant being~~ granting of a full power license.

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

2 A9:20

February 17, 1984

JAMES P. McGAUGHY, JR.
VICE PRESIDENT

U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
License No. NPF-13
Docket Nos. 50-416
File 0260/15525/15526/16694.4
PRD-84/03, Final Report for Unit 1 and Interim Report for Unit 2, Cracked Push Rod Balls on Transamerica Delaval Diesel Generators
AECM-84/0105

On February 16, 1984, Mississippi Power & Light Company notified Mr. B. Carroll, of your office, of a Reportable Deficiency at the Grand Gulf Nuclear Station (GGNS). The deficiency concerns cracked push rod balls in the Transamerica Delaval Diesel Generators for which a metallurigical evaluation indicates the initial crack was induced during the welding operation.

MP&L has completed evaluation of this deficiency on Unit 1 and determined that it is reportable under the provisions of 10CFR21 for Unit 1. The deficiency on Unit 2 is potentially reportable under 10CFR50.55(e); however, the evaluation on Unit 2 to determine reportability has not been completed.

Attached is our Final Report for Unit 1 and Interim Report for Unit 2. MP&L expects to submit an Update Report on Unit 2 by September 7, 1984.

Yours truly,

James P. McGaughy

RDC
RDC:dr
ATTACHMENT

cc: See page 2

8402270464

cc: Mr. J. B. Richard
Mr. R. B. McGehee
Mr. T. B. Conner

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. G. B. Taylor
South Miss. Electric Power Association
P. O. Box 1589
Hattiesburg, MS 39401

FINAL REPORT FOR UNIT 1 & INTERIM REPORT FOR UNIT 2 FOR PRD-84/03

1. Name and address of the individual ... informing the commission:

   J. P. McGaughy, Jr.
   Vice-President, Nuclear
   P.O. Box 1640
   Jackson, Mississippi 39205

2. Identification of the facility ... which ... contains a deficiency:

   Grand Gulf Nuclear Station (GGNS) Unit 1
   Port Gibson, Mississippi 39150

3. Identification of the firm ... supplying the basic component which ... contains a deficiency:

   The connector push rods were manufactured by Transamerica Delaval, Inc., and supplied to Grand Gulf by Bechtel Power Corporation, Gaithersburg, Maryland.

4. Nature of the deficiency ... and the safety hazard which ... could be created by such a deficiency ...:

   A. Description of the Deficiency

   A crack in the ball on the exhaust valve end of the connector push rod for #7 left bank cylinder of the Division I diesel generator was identified on Material Nonconformance Report (MNCR) 01002-83. Subsequently, during replacement of the defective connector push rods on Unit 1 with connector push rods from Unit 2 another ball was found to be cracked. This was documented on MNCR-01034-83.

   A metallurigical evaluation by Middle South Services on the Unit 1 cracked connector push rod ball indicated that:

   a. The initial crack in the ball was induced during the welding operation.

   b. The initial crack created stress concentrations from which nucleated two fatigue cracks.

   c. The fatigue cracks propagated for a short distance and, owing to the low toughness of the material, propagated the rest of the way by a cleavage type fracture. This was observed to have propagated about 330° around the circumference of the ball.

   d. The ball also showed extensive discoloration (blue) which implies considerable heat input in the ball causing it to crack during the welding operation.

B. Analysis of Safety Implications

The metallurgical evaluation indicates that the crack could propagate throughout the ball, causing the ball to break into several pieces, allowing the connector push rod to drop out of position and disable the affected exhaust valves and cylinder.

Parts of the failed push rod ball could also lodge between the main push rods and cylinder head disabling these push rods and possibly causing other damage to rockers and camshafts.

Nuclear Plant Engineering has concluded that the failure mode described in MNCR 01002-83 could result in the diesel generator inability to perform its design function in the event of a LOCA.

5. The date on which the information of such deficiency ... was obtained.

Mississippi Power and Light received information of the deficiency on November 10, 1983.

6. In the case of the basic component ... the number and location of all such components.

There are two (2) diesel generators on each Unit at Grand Gulf for a total of four (4). We do not have knowledge of the location of other defective equipment.

7. The corrective action which has been taken ... the name of the individual ... responsible for the action; and the length of time that has been ... taken to complete the action.

A. Corrective Actions Taken

1. Initially the defective push rods in both Division I and Division II diesels in Unit 1 were replaced, with spares.

2. A new push rod, using different materials and manufacturing processes, has been designed by Transamerica Delaval, Inc.

3. All the existing push rods were replaced with push rods of the new design in both Division I and Division II diesels in Unit 1.

B. Responsible Individual

Unit 1
J. E. Cross
Plant Manager
Mississippi Power & Light Co.

Unit 2
T. H. Cloninger
Unit 2 Project Manager
Mississippi Power & Light Co.

C. Length of Time to Complete Actions

1. The connector push rods and main push rods in the GGNS Unit 1, Division I and II diesel generators have been replaced with push rods of the new design.

2. Our Architect/Engineer has issued QAR-F-419 to track this concern for Unit 2.

8. Any advice related to the deficiency ... that has been, is being, or will be given to purchasers or licensees:

As the deficiency did not originate with MP&L, we have no advice to offer.

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

March 2, 1984

NUCLEAR PRODUCTION DEPARTMENT

U. S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File 0260/L-835.0
Update Report - Capscrew Securing Division 1 Diesel Generator Starting Air Manifold to its Support Plate Found Broken
LER 83-156/03 X-1
AECM-84/0136

This letter submits an update to a previous report submitted on November 2, 1983. The event for which the report was submitted occurred on October 3, 1983, during a routine inspection of the Division 1 Diesel Generator, when a capscrew securing the starting air manifold to its support plate on the Number 8 left bank cylinder was found broken inside the plate. A similar capscrew on the Number 7 left bank cylinder was found not securely tightened. A Limiting Condition for Operation was entered pursuant to Technical Specification 3.8.1.1.a. This was reported pursuant to Technical Specification 6.9.1.13.b.

Our investigation into the cause of the event is complete. Attached is LER 83-156/03 X-1 which is a final report.

Yours truly,

L. F. Dale
Manager of Nuclear Services

EBS/SHH:sad
Attachment

cc: (See Next Page)

8403190274

MISSISSIPPI POWER & LIGHT COMPANY

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. T. B. Conner (w/o)
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk (w/a)
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

(7 77) Update Report-Previous Report Date 11/2/83

LICENSEE EVENT REPORT

Attachment to AECM-84/0136
Page 1 of 1

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | M S G S 1 (2) | 0 0 0 - 0 0 0 0 0 - 0 0 (3) | 4 | 1 1 1 1 (4) | (5)
LICENSEE CODE | LICENSE NUMBER | LICENSE TYPE | CAT

CON'T
0 1 | REPORT SOURCE L (6) | 0 5 0 0 0 4 1 6 (7) | 1 0 0 3 8 3 (8) | 0 3 0 2 8 4 (9)
DOCKET NUMBER | EVENT DATE | REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | During a routine inspection of the Div. I D/G, a capscrew securing the
0 3 | starting air manifold to its support plate on the No. 8 left bank cylin-
0 4 | der was found broken inside the plate. A similar capscrew on the No. 7
0 5 | LB cylinder was found not securely tightened. An LCO was entered (Div. I
0 6 | D/G declared inoperable) pursuant to T.S.3.8.1.1.a since it was
0 7 | questionable whether the seismic component (support plate) was capable
0 8 | of performing its designed function. Div. 2 & 3 D/Gs were operable.

SYSTEM CODE E E (11) | CAUSE CODE E (12) | CAUSE SUBCODE B (13) | COMPONENT CODE E N G I N E (14) | COMP SUBCODE Z (15) | VALVE SUBCODE Z (16)

(17) LER RO REPORT NUMBER: EVENT YEAR 8 3 | — | SEQUENTIAL REPORT NO. 1 5 6 | / | OCCURRENCE CODE 0 3 | REPORT TYPE X | — | REVISION NO. 1

ACTION TAKEN A (18) | FUTURE ACTION Z (19) | EFFECT ON PLANT Z (20) | SHUTDOWN METHOD Z (21) | HOURS 0 0 0 0 (22) | ATTACHMENT SUBMITTED N (23) | NPRD-4 PRINT SUB. N (24) | PRIME COMP. SUPPLIER A (25) | COMPONENT MANUFACTURER D 0 5 5 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | The root cause of the failed capscrew could not be determined due to the
1 1 | capscrew being removed and eliminated before an accurate analysis could
1 2 | be performed. The failed capscrew was replaced with one of the same type
1 3 | and grade. The other capscrew was tightened to its required torque. The
1 4 | D/G was out of service for 6.5 hours. This is a final report.

FACILITY STATUS B (28) | % POWER 0 0 1 (29) | OTHER STATUS (30) NA | METHOD OF DISCOVERY B (31) | DISCOVERY DESCRIPTION (32) Routine Inspection

ACTIVITY RELEASED Z (33) | CONTENT OF RELEASE Z (34) | AMOUNT OF ACTIVITY (35) NA | LOCATION OF RELEASE (36) NA

PERSONNEL EXPOSURES
NUMBER 0 0 0 (37) | TYPE Z (38) | DESCRIPTION (39) NA

PERSONNEL INJURIES
NUMBER 0 0 0 (40) | DESCRIPTION (41) NA

LOSS OF OR DAMAGE TO FACILITY
TYPE Z (42) | DESCRIPTION NA

PUBLICITY
ISSUED N (44) | DESCRIPTION (45) NA

NRC USE ONLY

NAME OF PREPARER Ron Byrd | PHONE

GPO 917-924

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

A0.50

March 30, 1984

DIESEL

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File: 0260/L-835.0
Update Report - Air Receiver Pressure for Diesel Generator 11 not Maintained as Required by Technical Specifications
LER 83-078/03 X-2
AECM-84/0197

This letter submits an update to a previous report submitted on October 5, 1983. The event for which the report was submitted occurred on July 1, 1983, when the Control Room operators were unable to maintain the air receiver pressure for Diesel Generator 11 greater than 160 psig as required by Technical Specification 4.8.1.1.2.a.7. Diesel Generator 12 was inoperable at that time due to a maintenance tag out of the SSW "B" Subsystem. Due to the inoperable status of the two diesel generators, Action (a) of Technical Specification 3.8.1.2 was entered. The event was reported pursuant to Technical Specification 6.9.1.13.b.

The purpose of this update is to revise the corrective action described in the previous update. This is a final report. Attached is LER 83-078/03 X-2 with Supplementary Information.

Yours truly,

G. W. Smith for

L. F. Dale
Manager of Nuclear Services

EBS/SHH:rg
Attachment

cc: See next page

8404090344

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. T. B. Conner (w/o)
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk (w/a)
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

LICENSEE EVENT REPORT

CONTROL BLOCK: ① (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 | M S G G S 1 ② | 0 0 - 0 0 0 0 0 - 0 0 ③ | 4 1 1 1 1 ④ | ⑤
LICENSEE CODE 9–14; LICENSE NUMBER 15–25; LICENSE TYPE 26–30; CAT 57–58

CON'T
01 REPORT SOURCE L ⑥ | 0 5 0 0 0 4 1 6 ⑦ | 0 7 0 1 8 3 ⑧ | 0 3 3 0 8 4 ⑨
DOCKET NUMBER 61–68; EVENT DATE 69–74; REPORT DATE 75–80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES ⑩

02 On July 1, 1983, the Control Room operators were unable to maintain
03 the air receiver pressure for Diesel Generator 11 greater than 160
04 psig as required by T.S.4.8.1.1.2.a.7. Diesel Generator 12 was already
05 inoperable due to a maintenance tag out of the SSW "B" Subsystem. Due to
06 the inoperable status of the two diesel generators, Action (a) of
07 T.S.3.8.1.2 was entered. This is being submitted pursuant to
08 T.S.6.9.1.13.b as a final report.

	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
09	E E ⑪	E ⑫	B ⑬	V A L V E X ⑭	X ⑮	B ⑯

⑰ LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	8 3	—	0 7 8	/	0 3	X	—	2

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS ㉒	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
E ⑱	Z ⑲	Z ⑳	Z ㉑	0 0 0 0	Y ㉓	N ㉔	A ㉕	C 7 1 0 ㉖

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS ㉗

10 The cause was setpoint drift and damaged seals of the relief valves.
11 Relocation of the air pressure sensing point in Sept. 1983 reduced com-
12 pressor cycling thereby reducing the valve's setpoint drift and damage
13 to seats caused by its frequent operation. The event has not recurred
14 since.

	FACILITY STATUS	% POWER	OTHER STATUS ㉚	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION ㉜
15	6 ㉘	0 0 0 ㉙	NA	A ㉛	System Operation

	ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY ㉟	LOCATION OF RELEASE ㊱
16	Z ㉝	Z ㉞	NA	NA

PERSONNEL EXPOSURES

	NUMBER	TYPE	DESCRIPTION ㊴
17	0 0 0 ㊲	Z ㊳	NA

PERSONNEL INJURIES

	NUMBER	DESCRIPTION ㊶
18	0 0 0 ㊵	NA

LOSS OF OR DAMAGE TO FACILITY ㊸

	TYPE	DESCRIPTION
19	Z ㊷	NA

PUBLICITY

	ISSUED	DESCRIPTION ㊺	NRC USE ONLY
20	N ㊹	NA	

NAME OF PREPARER R. W. Byrd PHONE:

Supplementary Information to
LER 83-078/03 X-2

Mississippi Power & Light Company
Grand Gulf Nuclear Station - Unit 1
Docket No. 50-416

Technical Specification Involved: 3.8.1.2
Reported Under Technical Specification: 6.9.1.13.b

Event Narrative

On July 1, 1983, operators were unable to maintain pressure in an air receiver for Diesel Generator 11 greater than 160 psig. A relief valve was passing air which prevented the compressors from restoring pressure to the tank.

The pressure sensing point for the compressor start/stop logic at that time was on a line between the two air receivers and did not always reflect true tank pressure. A false low pressure signal caused the compressor to operate continuously or cycle frequently. The type relief valve used allows a set-point drift when the valve lifts repeatedly.

In September 1983, Design Change 83/0261 relocated the sensing point to the air receiving tanks to provide a true reading. Compressor cycling was reduced significantly and the event has not recurred. This action is considered adequate to correct the root cause of the event. Material Non-Conformance Report (MNCR) 00503-83 was initiated to determine if additional corrective actions are required. None are planned at this time. This is submitted as a final report.

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

JAMES P. McGAUGHY, JR.
VICE PRESIDENT

April 6, 1984

DIESEL

U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File 0260/15525/15526/16694.4
PRD-84/06, Final Report for Unit 1, Interim Report for Unit 2, Potential Defect in Spare Piston Skirt Castings
AECM-84/0213

On April 2, 1984, Mississippi Power & Light Company notified Mr. R. Carroll, of your office, of a Reportable Deficiency at the Grand Gulf Nuclear Station (GGNS). The deficiency concerns the improper heat treatment for certain spare Transamerica Delaval, Inc. (TDI) piston skirt castings.

MP&L has evaluated this deficiency and has determined that it is reportable under the provisions of 10CFR21 for Unit 1. Reportability for Unit 2 is indeterminate at this time. Attached is the Unit 1 Final Report and Unit 2 Interim Report. An update is expected for Unit 2 by October 5, 1984.

Yours truly,

For J. P. McGaughy, Jr.

RDC/KDS
RDC/KDS:dr
ATTACHMENT

cc: See page 2

8404160007

cc: Mr. J. B. Richard
Mr. R. B. McGehee
Mr. T. B. Conner

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. G. B. Taylor
South Miss. Electric Power Association
P. O. Box 1589
Hattiesburg, MS 39401

FINAL REPORT FOR UNIT 1 FOR PRD-84/06
INTERIM REPORT NO. 1 FOR UNIT 2

1. Name and address of the individual ... informing the commission:

J. P. McGaughy, Jr.
Vice-President, Nuclear
P.O. Box 1640
Jackson, Mississippi 39205

2. Identification of the facility ... which ... contains a deficiency:

Grand Gulf Nuclear Station (GGNS) Unit 1
Port Gibson, Mississippi 39150

Determination of reportability for Unit 2 is continuing at this time.

3. Identification of the firm ... supplying the basic component which ... contains a deficiency:

The piston skirt castings were manufactured by Transamerica Delaval, Inc., Oakland California, and supplied to Grand Gulf by Bechtel Power Corporation, Gaithersburg, Maryland.

4. Nature of the deficiency ... and the safety hazard which ... could be created by such a deficiency ...:

A. Description of the Deficiency

The deficiency involves a condition with a spare piston skirt, heat number W93-566G, which contains the potential for possible residual stress. This condition was caused by improper heat treating during manufacture. The residual stress in combination with operating stress could cause cracking of the piston skirt during operation of the diesel engine, which could result in engine failure.

B. Analysis of Safety Implications

The spare piston skirt is located in the warehouse, and was available for use in either of the two Delaval Unit 1 standby diesel engines. Had the spare piston skirt been used, failure of the piston skirt would have caused the engine to be inoperable. Therefore, a failure of the engine could result in the diesel generator's inability to perform its intended design functions in the event of a LOCA.

5. The date on which the information of such deficiency ... was obtained.

Mississippi Power and Light received information of the deficiency on December 16, 1983, per Delaval letter to MP&L. An evaluation was performed and the deficiency was reported to Mr. R. Carroll, of your office, as a reportable deficiency for Unit 1 on April 2, 1984. The MP&L "Responsible Officer," Mr. J. P. McGaughy, Jr., will be notified when he returns to his office.

6. In the case of the basic component ... the number and location of all such components.

There are two spare piston skirt assemblies at GGNS Unit 1. However, only one spare piston skirt assembly, heat number W93-566G, was identified as being included in the suspect heat numbers identified by Transamerica Delaval. Other locations of defective components were listed by Transamerica Delaval in their notification letter to the NRC of October 28, 1982.

We do not have knowledge of the location of other defective equipment.

7. The corrective action which has been taken ... the name of the individual ... responsible for the action; and the length of time that has been ... taken to complete the action.

A. Corrective Actions Taken

Material Nonconformance Report (MNCR) 1029-83 has been issued to document the nonconformance. A Plant Quality hold tag has been placed on the defective piston skirt. The MNCR disposition is pending direction from Transamerica Delaval for return of the defective piston skirt for repair, nondestructive testing and proper heat treating.

B. Responsible Individual

Unit 1
J. E. Cross
Plant Manager
Mississippi Power & Light Co.

C. Length of Time to Complete Actions

The defective spare piston skirt will be returned to the vendor upon MP&L's receipt of formal authorization.

8. Any advice related to the deficiency ... that has been, is being, or will be given to purchasers or licensees:

As the deficiency did not originate with MP&L, we have no advice to offer.

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

4 A8:50

March 30, 1984

NUCLEAR PRODUCTION DEPARTMENT

DIESEL

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File: 0260/L-835.0
Update Report - Division 1 Diesel Generator Shutdown Due to Failure of Exhaust Gaskets on RB1 and LB5 Cylinders
LER 83-136/03 X-4
AECM-84/0196

This letter submits an update to a previous update report submitted on January 13, 1984. The event for which the report was submitted occurred on August 30, 1983, during a 24 hour surveillance test run. The Division 1 Diesel Generator was shutdown when the right bank number 1 and left bank number 5 cylinder exhaust gaskets failed and a crack and two broken welds were discovered on the intercoolers. The diesel was 98 minutes into the test run. This was considered a valid successful test pursuant to Regulatory Position C.2.e(3) of Regulatory Guide 1.108. This was reported pursuant to Technical Specification 4.8.1.1.3 and 6.9.1.13.b.

Our investigation into the cause is complete. Corrective actions for the above event are complete or are in the process of being completed. This is a final report. Attached is LER 83-136/03 X-4 with Supplementary Information.

Yours truly,

G. W. Smith for

L. F. Dale
Manager of Nuclear Services

EBS/SHH:rg
Attachment

cc: See next page

8404100393

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. T. B. Conner (w/o)
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk (w/a)
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

(7-77) Update report - previous report date - 1/16/84

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | M S G G S 1 (2) | 0 0 - 0 0 0 0 0 - 0 0 (3) | 4 1 1 1 1 (4) | (5)

LICENSEE CODE | LICENSE NUMBER | LICENSE TYPE | CAT

CON'T

0 1 | REPORT SOURCE L (6) | 0 5 0 0 0 4 1 6 (7) | 0 8 3 0 8 3 (8) | 0 3 3 0 8 4 (9)

DOCKET NUMBER | EVENT DATE | REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | On 8-30-83, during a 24-hour surveillance test run, the Div. I D/G was
0 3 | shutdown when the RB1 and LB5 cylinder exhaust gaskets failed and a
0 4 | crack and 2 broken welds were discovered on the intercoolers. The diesel
0 5 | was 98 minutes into the test run. Per Reg. Guide 1.108, para C.2.e.(3),
0 6 | this was a valid successful test. There was no effect on the health and
0 7 | safety of the public nor was there a threat to plant safety. This is
0 8 | reported pursuant to T.S.4.8.1.1.3. This is a final report.

SYSTEM CODE | CAUSE CODE | CAUSE SUBCODE | COMPONENT CODE | COMP. SUBCODE | VALVE SUBCODE

0 9 | E E (11) | B (12) | B (13) | E N G I N E (14) | Z (15) | Z (16)

(17) LER RO REPORT NUMBER | EVENT YEAR | SEQUENTIAL REPORT NO. | OCCURRENCE CODE | REPORT TYPE | REVISION NO.

8 3 | 1 3 6 | 0 3 | X | 4

ACTION TAKEN | FUTURE ACTION | EFFECT ON PLANT | SHUTDOWN METHOD | HOURS (22) | ATTACHMENT SUBMITTED | NPRD-4 FORM SUB. | PRIME COMP. SUPPLIER | COMPONENT MANUFACTURER

A (18) | F (19) | Z (20) | Z (21) | 0 0 0 0 | N (23) | N (24) | A (25) | D 0 5 5 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | The gasket failures were caused by loose manifold bolts and have been
1 1 | replaced. A crack in the base metal of the LB intercooler was caused
1 2 | by the turbocharger misalignment and mounting problems reported in
1 3 | LER 83-107. Two broken stay rod welds on the RB intercooler were
1 4 | due to insufficient filler welds. The crack & welds were weld repaired.

FACILITY STATUS | % POWER | OTHER STATUS (30) | METHOD OF DISCOVERY | DISCOVERY DESCRIPTION (32)

1 5 | B (28) | 0 0 0 (29) | NA | A (31) | Operator Observation

ACTIVITY RELEASED | CONTENT OF RELEASE | AMOUNT OF ACTIVITY (35) | LOCATION OF RELEASE (36)

1 6 | Z (33) | Z (34) | NA | NA

PERSONNEL EXPOSURES: NUMBER | TYPE | DESCRIPTION (39)

1 7 | 0 0 0 (37) | Z (38) | NA

PERSONNEL INJURIES: NUMBER | DESCRIPTION (41)

1 8 | 0 0 0 (40) | NA

LOSS OF OR DAMAGE TO FACILITY (43): TYPE | DESCRIPTION

1 9 | Z (42) | NA

PUBLICITY: ISSUED | DESCRIPTION (45) | NRC USE ONLY

2 0 | N (44) | NA

NAME OF PREPARER R. W. Byrd PHONE

GPO 811-928

SUPPLEMENTARY INFORMATION TO
LER 83-136/03 X-4

Mississippi Power & Light Company
Grand Gulf Nuclear Station - Unit 1
Docket No. 50-416

Technical Specification Involved: 4.8.1.1.3
Reported Under Technical Specification: 6.9.1.13.b

Event Narrative:

The bolts used to attach the exhaust manifolds to the Diesel Generator exhaust ports were 304 stainless steel, Transamerica Delaval Inc. part number GB-079-118 (item 63, drawing 02-380-06). The bolts were difficult to unscrew and a visual inspection revealed high temperature discoloration. A subsequent review determined that 304 stainless steel is not the best choice for the application. The bolts were replaced with 316 stainless steel until replacement bolts of a type more suitable for this service are obtained.

The crack in the base metal of the LB intercooler was caused by vibration that was induced by the turbocharger misalignment and mounting problems reported in LER 83-107.

The broken stay rod welds on the RB intercooler were caused by insufficient fillet welds. The failures may have been aggravated by the turbocharger bolt problem reported in LER 83-107. The fillet welds were specified in the vendor manual to be 1/4" but were discovered to be less than 1/8". The broken welds resulted in small air leaks at the juncture point between the rods and the intercooler. The welds were removed and the area was weld repaired to specifications.

There was no effect on the health and safety of the public nor was there a threat to plant safety. All Technical Specification action requirements were met. This is reported pursuant to Technical Specification 4.8.1.1.3 and is submitted as a final report.

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

84 MAR 2 A10:00

March 27, 1984

DIESEL

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File: 0260/L-835.0
Update Report - Mounting Bolts on Division I Diesel Generator Turbocharger Found Loose or Broken
LER 83-107/03 X-2
AECM-84/0169

This letter submits an update to previous reports submitted on August 26, 1983 and October 24, 1983. The event for which the report was submitted occurred on July 26, 1983, when during a 24 hour test run some of the mounting bolts for a Division I Diesel Generator turbocharger were found to be either loose or broken. During subsequent tests and inspections, cracked welds were found on the intercooler adapter between the intercooler and turbocharger and in the cooling water outlet piping. The diesel generator had been loaded to greater than 50% for longer than 1 hour, therefore, this was considered a valid successful test pursuant to Regulatory Position C.2.e.(3) of Regulatory Guide 1.108. This was reported pursuant to Technical Specification 6.9.1.13.b.

Our investigation into the cause of the event and corrective action to prevent recurrence is complete. This is a final report. Attached is LER 83-107/03 X-2 with Supplementary Information.

Yours truly,

L. F. Dale
Manager of Nuclear Services

EBS/SHH:rg
Attachment

cc: See next page

8404050132

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. T. B. Conner (w/o)
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk (w/a)
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION

0 1 LICENSEE CODE (2)	M S G S S 1
LICENSE NUMBER (3)	0 0 - 0 0 0 0 0 - 0 0
LICENSE TYPE (4)	4 1 1 1 1
CAT (5)	

CON'T 0 1 REPORT SOURCE L (6) DOCKET NUMBER 0 5 0 0 0 4 1 6 (7) EVENT DATE 0 7 2 6 8 3 (8) REPORT DATE 0 3 2 7 8 4 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 On 7/26/83, during a test, the mounting bolts for a Div. I D/G turbo-
0 3 charger were found to be either loose or broken. During this and
0 4 subsequent tests and inspections, associated parts and welds were
0 5 discovered cracked or broken. The requirements of T.S. 3.8.1.2 were met.
0 6 The event had no effect on the health and safety of the public nor was
0 7 there a threat to plant safety. This is reported pursuant to T.S.
0 8 4.8.1.1.3. This is a final report.

0 9 SYSTEM CODE E E (11) CAUSE CODE B (12) CAUSE SUBCODE B (13) COMPONENT CODE E N G I N E (14) COMP. SUBCODE Z (15) VALVE SUBCODE Z (16)

(17) LER/RO REPORT NUMBER: EVENT YEAR 8 3 — SEQUENTIAL REPORT NO. 1 0 7 / OCCURRENCE CODE 0 3 REPORT TYPE X — REVISION NO. 2

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
B (18)	Z (19)	Z (20)	Z (21)	0 0 0 0	Y (23)	N (24)	A (25)	D 0 5 5 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The failures of the bolts are attributed to turbocharger misalignment.
1 1 The cracked components were due to turbocharger vibration after the
1 2 bolts failed. The cracks were weld repaired, & longer bolts were used to
1 3 remount & realign the turbocharger. During subsequent tests, bolts on the
1 4 LB turbocharger failed again due to the alignment problem (SR 84-007).

1 5 FACILITY STATUS 8 (28) % POWER 0 0 0 (29) OTHER STATUS (30) NA METHOD OF DISCOVERY B (31) DISCOVERY DESCRIPTION (32) Surveillance Testing

1 6 ACTIVITY RELEASED Z (33) CONTENT OF RELEASE Z (34) AMOUNT OF ACTIVITY (35) NA LOCATION OF RELEASE (36) NA

PERSONNEL EXPOSURES
1 7 NUMBER 0 0 0 (37) TYPE Z (38) DESCRIPTION (39) NA

PERSONNEL INJURIES
1 8 NUMBER 0 0 0 (40) DESCRIPTION (41) NA

LOSS OF OR DAMAGE TO FACILITY (43)
1 9 TYPE Z (42) DESCRIPTION NA

PUBLICITY
2 0 ISSUED N (44) DESCRIPTION (45) NA

NRC USE ONLY

NAME OF PREPARER R. W. Byrd PHONE:

Supplementary Information to
LER 83-107/03 X-2

Mississippi Power & Light Company
Grand Gulf Nuclear Station - Unit 1
Docket No. 50-416

Technical Specification Involved: 4.8.1.1.3
Reported Under Technical Specification: 6.9.1.13.b

Event Narrative

On July 26, 1983, during a routine visual inspection 92 minutes into a 24 hour surveillance test run of the Division I Diesel Generator, the bolts that hold the left bank turbocharger to its support or mounting plate were discovered to be either loose or broken. Four 5/18-11x2" SAE grade 5 capscrew bolts are used to mount the turbocharger. Two of the four bolts for the LB turbocharger were broken and the others were loose. One of the bolts had sheared off and the broken part remained in the LB turbocharger housing. All of the bolts, except the one sheared off, were replaced and torqued to 60 ft-lbs. No other damage was apparent.

As a precaution, the Division II Diesel Generator turbocharger bolts were inspected. Two bolts were found loose, one on each turbocharger; in addition, two bolts on the LB turbocharger were not of the type specified by the manufacturer. The incorrect bolts were replaced and all the bolts were torqued to 60 ft-lbs.

On July 27, 1983, the Division I Diesel Generator was 9 hours into a 24 hour surveillance test run when mounting bolts on the turbocharger were again inspected and found to be either loose or broken. The Diesel Generator was manually shutdown for repairs. Subsequent inspections and tests including short maintenance runs, over the next 3 weeks revealed the following:

1. cracked welds in the RB and LB intercooler adapters which are between the intercoolers and turbochargers,

2. a base metal crack (1" long) in the LB intercooler,

3. a through wall crack in the weld between the RB turbocharger and the cooling water discharge piping,

4. A through wall crack in the weld between the LB turbocharger and the cooling water discharge piping, and

5. two broken mounting bolts in the LB turbocharger.

The cracked welds were weld repaired. The LB turbocharger was replaced and the mounting bolts were changed from 5/8"-11x2" SAE grade 5 capscrew bolts to 5/8"-11x2½" SAE grade 5 capscrew bolts. Flat washers were added under the existing lock washers. The turbocharger was realigned to eliminate an air gap between it and the mounting base.

The misalignment is believed to be the root cause of the bolt failures. The bolt failures allowed relative movement between the turbocharger and its mounting base plate; the resulting vibration caused fatigue cracking in the attached piping and intercooler adapters. All applicable corrective actions have also been performed on the Division II Diesel Generator.

A spot check radiography of 10 butt welds at random locations on the jacket water, lube oil, and starting air systems was performed on the Division I Diesel Generator. One weld which did not meet acceptance criteria, was weld repaired.

On August 21, 1983, the Division I Diesel Generator completed a successful 40 hour maintenance run with no problems. It was restarted 2 hours later to begin a 24 hour surveillance test. Approximately 8½ hours later, a second thru wall crack developed in the weld between the LB turbocharger and the cooling water discharge piping. This was weld repaired and is attributable to the conditions generated by the original turbocharger bolt problem. The torque was checked on all of the turbocharger mounting bolts after 48½ hours of operation since the bolt change and there was no decrease in five bolts and no appreciable change in the other three.

On August 30, 1983 (Reference LER 83-136/03 X-2), a base metal crack was discovered in the LB turbocharger intercooler adapter 98 minutes into a 24 hour surveillance test. The crack was weld repaired. This event was also attributed to the conditions generated by the original bolt problem.

A design change was initiated to replace all of the coolant piping associated with the turbochargers. This was performed during the diesel repairs as a result of the fuel oil fire of September 4, 1983 (Reference LER 83-126/01 T-0). In addition, all equipment alignments associated with the turbocharger were checked and corrected as necessary.

During subsequent tests on January 31 and February 10, 1984, bolts again failed on the Division I Diesel Generator LB turbocharger (reported in Special Report 84-007/0). The failures on January 31 and February 10 were again attributed to misalignment of the turbocharger. A Maintenance Work Order (MWO) utilizing Special Instructions designed to preclude misalignment was implemented. The alignment is now corrected.

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

84 MAR 26 A10:19

March 21, 1984

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File: 0260/L-835.0
Update Report - Division 2 Standby Diesel Generator Rear Crankcase Cover Capscrew Defective
LER 82-080/01 X-4
AECM-84/0168

This letter submits an update to a previous update report submitted on August 31, 1983. The event for which the report was submitted occurred on October 4, 1982, when during a special inspection, one of the capscrews which secure the rear crankcase cover to the engine block of the Division 2 Standby Diesel Generator was discovered defective. The report was submitted pursuant to Technical Specification 6.9.1.12.e and i.

A design change (DCP 82/4183) has been completed which replaced the original crankcase bolts with a higher strength grade. Design Change Package 82/0039 installed protective screens on the generator air gaps to prevent the entrance of foreign materials which could result in generator damage.

As reported in the last update, a test program was developed, the Division 2 diesel was instrumented and data was collected during a test run. This data was considered unacceptable. MP&L plans to perform additional testing and vibration analysis. However, based on inspections of bolts removed from the covers since that time, we conclude that the high strength bolts and the protective screens are adequate to prevent recurrence. This is submitted as a final report. Attached is LER 82-080/01 X-4 with Supplementary Information.

Yours truly,

L. F. Dale
Manager of Nuclear Services

EBS/SHH:rg
Attachment

cc: See next page

8403300113

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. T. B. Conner (w/o)
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk (w/a)
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 — LICENSEE CODE: M S G G S 1 (2) — LICENSE NUMBER: 0 0 - 0 0 0 0 0 - 0 0 (3) — LICENSE TYPE: 4 1 1 1 1 (4) — CAT (5)

CON'T 01 — REPORT SOURCE: L (6) — DOCKET NUMBER: 0 5 0 0 0 4 1 6 (7) — EVENT DATE: 1 0 0 4 8 2 (8) — REPORT DATE: 0 3 2 1 8 4 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 With the unit in Cold Shutdown, a special inspection on the Division 2
03 Standby Diesel Generator was conducted. During this inspection, one of
04 the capscrews which secures the rear crankcase cover to the engine block
05 was discovered to be defective. This report is submitted pursuant to
06 T.S.6.9.1.12.e and i. The event had no effect on the health and safety
07 of the public and did not constitute a threat to plant safety. The
08 Div. 1 and 3 D/Gs were operable at the time the defect was discovered.

09	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
	E E (11)	B (12)	B (13)	E N G I N E (14)	Z (15)	Z (16)

(17) LER/RO REPORT NUMBER

EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
8 2	—	0 8 0	/	0 1	X	—	4

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
A (18)	Z (19)	Z (20)	Z (21)	0 0 0 0	Y (23)	N (24)	A (25)	D 0 5 5 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The capscrew broke while being checked for the correct torque.
11 It is believed that the capscrew had partially cracked due to fatigue
12 during engine operation prior to the torque check. The capscrew and
13 20 others were replaced. A design change has been completed which
14 replaced the original capscrews with higher strength capscrews.

15 FACILITY STATUS: B (28) — % POWER: 0 0 0 (29) — OTHER STATUS (30): NA — METHOD OF DISCOVERY: C (31) — DISCOVERY DESCRIPTION (32): Special Inspection by Maintenance

16 ACTIVITY RELEASED: Z (33) — CONTENT OF RELEASE: Z (34) — AMOUNT OF ACTIVITY (35): NA — LOCATION OF RELEASE (36): NA

PERSONNEL EXPOSURES
17 NUMBER: 0 0 0 (37) — TYPE: Z (38) — DESCRIPTION (39): NA

PERSONNEL INJURIES
18 NUMBER: 0 0 0 (40) — DESCRIPTION (41): NA

LOSS OF OR DAMAGE TO FACILITY (43)
19 TYPE: Z (42) — DESCRIPTION: NA

PUBLICITY
20 ISSUED: N (44) — DESCRIPTION (45): NA — NRC USE ONLY

NAME OF PREPARER: Ron Byrd PHONE:

Supplementary Information to
LER 82-080/01 X-4

Mississippi Power & Light Company
Grand Gulf Nuclear Station - Unit 1
Docket No. 50-416

Technical Specification Involved: N/A
Reported Under Technical Specification: 6.9.1.12.e and i

Event Narrative

This is an update to a previous report submitted on August 31, 1983. The following paragraphs describe the event reported.

The special inspection of the 21 capscrews which secure the rear crankcase cover to the engine block of the Division 2 Standby Diesel Generator revealed that one capscrew had failed. The capscrews were SAE Grade 5, 5/8 NC X 1-3/4".

The maintenance work order which led to the discovery of the failed capscrew had been initiated as follow-up to a previous, similarly failed capscrew on the same Division 2 Standby Diesel Generator rear crankcase cover. This situation was previously reported to the NRC in Potentially Reportable Deficiency (PRD) 82/14 under 10CFR50.55e. The first failure occurred on March 15, 1982, during the 24-hour load test performed during the Pre-Operational Test Program. The failure of March 15, 1982, resulted in a generator fault caused by the head of the broken capscrew becoming lodged between the generator stator and rotor while the generator was at 100% load. This resulted in the generator tripping on Generator Differential Current. The generator was subsequently replaced. The capscrews securing the rear crankcase cover were inspected for correct tightness and found to be below the required 60 ft-lbs. The capscrews were replaced on both Division 1 and 2 Diesel Generators and torqued to the required 60 ft-lbs.

The follow-up work order, performed on October 4, 1982, instructed that each of the capscrews securing the rear crankcase cover to the engine block be checked for correct torque (60 ft-lbs). Three of the capscrews were found to be less than 40 ft-lbs (20, 23, and 35 ft-lbs). The work order further instructed that any capscrews not within ±2 ft-lbs of the required 60 ft-lbs be torqued within the acceptable range. When the capscrew (which was found at 20 ft-lbs originally) was tightened it sheared off approximately one inch from the bottom side of the head before reaching 60 ft-lbs. Another work order was subsequently issued and the 21 capscrews on the Division 2 Diesel Generator rear cover were replaced with new replacement capscrews and torqued to 60 ft-lbs. An inspection of the Division 1 Diesel Generator revealed no problems (the Division 3 Diesel Generator is supplied by a different manufacturer so no inspection was required).

Nuclear Plant Engineering has attributed the cause of failure to fatigue cracking. A Design Change (DCP 82/4183) has been completed which replaced the original crankcase capscrews with a higher (SA540 Grade B24) strength type on both Division 1 and 2 Diesel Generators. Design Change Package (DCP) 82-0039 installed protective screens on the generator air gaps to prevent the entrance of foreign materials which could result in generator damage.

A test program was developed, the Division 2 diesel was instrumented and data was collected during a test run. This data was considered unacceptable. MP&L plans to perform additional testing and vibration analysis. However, based on inspections of bolts rem ed from the covers since that time, we conclude that the high str h bolts and the protective screens are adequate to prevent recurrence. This is submitted as a final report.

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

82 AR 0: 01

March 16, 1984

DIESEL

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File: 0260/L-835.0
Update Report - Diesel Generator 11
Declared Inoperable After
Discovery of a Fuel Oil Leak
LER 83-171/03 X-1
AECM-84/0146

This letter submits an update to a previous report submitted on November 28, 1983. The event for which the report was submitted occurred on October 28, 1983, while prelubing Diesel Generator 11, when a fuel oil leak was discovered at a connection in the number 5 right bank cylinder line. The subcover head gasket at the same cylinder was also damaged and leaking. The diesel generator was declared inoperable and a Limiting Condition for Operation was entered pursuant to Technical Specification 3.8.1.1 when the oil leak was discovered. This was reported pursuant to Technical Specification 6.9.1.13.b.

Our investigation and corrective action associated with the above event is complete. This is a final report. Attached is LER 83-171/03 X-1 with Supplementary Information.

Yours truly,

L. F. Dale
Manager of Nuclear Services

EBS/SHH:rg
Attachment

cc: See next page

8403260244

MISSISSIPPI POWER & LIGHT COMPANY

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. T. B. Conner (w/o)
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk (w/a)
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

LICENSEE EVENT REPORT

CONTROL BLOCK: | | | | | | | (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 | M S G G S 1 (2) 0 0 - 0 0 0 0 0 - 0 0 (3) 4 1 1 1 1 (4) | | (5)
LICENSEE CODE / LICENSE NUMBER / LICENSE TYPE / CAT

CON'T
01 REPORT SOURCE L (6) 0 5 0 0 0 4 1 6 (7) 1 0 2 8 8 3 (8) 0 3 1 4 8 4 (9)
DOCKET NUMBER / EVENT DATE / REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 On October 28, 1983, while prelubing D/G 11, a fuel oil leak was discov-
03 ered at a 90 degree connection in the #5 right bank cylinder line. The
04 subcover head gasket at the same cylinder was also damaged and leaking.
05 During maintenance work on these failures, a connector pushrod was found
06 broken between the ball weld and the rod. The D/G was declared
07 inoperable and an LCO was entered pursuant to T.S.3.8.1.1 when the oil
08 leak was discovered. This is reported pursuant to T.S.6.9.1.13.b.

	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
09	E E (11)	E (12)	B (13)	E N G I N E (14)	Z (15)	Z (16)

(17) LER/RO REPORT NUMBER

EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
8 3	—	1 7 1	/	0 3	X	—	1

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
F (18)	Z (19)	Z (20)	Z (21)	0 0 0 0	Y (23)	N (24)	A (25)	D 0 5 5 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The lube oil leak was due to a crack in the tubing which occurred while
11 loosening and tightening the fitting during maintenance work. The push-
12 rod failure was due to the ball material being difficult to weld. A new
13 replacement connector pushrod design developed by TDI has been installed
14 in both Division 1 and Division 2 Diesel Generators.

	FACILITY STATUS	% POWER	OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
15	B (28)	0 0 1 (29)	NA	B (31)	Equipment Prep for Surveillance

	ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
16	Z (33)	Z (34)	NA	NA

PERSONNEL EXPOSURES

	NUMBER	TYPE	DESCRIPTION (39)
17	0 0 0 (37)	Z (38)	NA

PERSONNEL INJURIES

	NUMBER	DESCRIPTION (41)
18	0 0 0 (40)	NA

LOSS OF OR DAMAGE TO FACILITY (43)

	TYPE	DESCRIPTION
19	Z (42)	NA

PUBLICITY

	ISSUED	DESCRIPTION (45)
20	N (44)	NA

NRC USE ONLY

NAME OF PREPARER Ron Byrd PHONE

SUPPLEMENTARY INFORMATION TO
LER 83-171/03 X-1

Mississippi Power & Light Company
Grand Gulf Nuclear Station - Unit 1
Docket No. 50-416

Technical Specification Involved: 3.8.1.1
Reported Under Technical Specification: 6.9.1.13.b

Event Narrative:

On October 28, 1983, while prelubing Diesel Generator 11, a fuel oil leak was discovered at a 90 degree connection in the line to the number 5 right bank cylinder. The subcover gasket at the same cylinder was also found damaged and leaking. The diesel generator was declared inoperable and removed from service to make repairs. An LCO was entered pursuant to Technical Specification 3.8.1.1. The diesel generator remained inoperable for 12.25 hours.

During this time Diesel Generator 12 was also inoperable. Two hours after entrance into the LCO, shutdown preparations were initiated in accordance with Technical Specification 3.8.1.1. The shutdown was not completed as Diesel Generator 11 was restored 10.25 hours later.

The leaking tubing and fitting were replaced. The blown gasket was also replaced. During this maintenance work a connector pushrod was found broken between the ball weld and the rod. The pushrod was replaced.

During subsequent inspections, 14 of 16 connector pushrods were discovered with cracked or separated welds on the Division 1 Diesel Generator and 13 of 16 on the Division II Diesel Generator. A metallurgical evaluation concluded that the ball material is difficult to weld (details of this evaluation were provided in the Diesel Generator Comprehensive Reliability Report, AECM-84/0103). Also, the discovery of a cracked connector pushrod ball demonstrated that the underbead cracks induced during the welding operation could propagate through the ball material, causing it to break into pieces which could potentially disable the diesel generator.

Further discussion of these failures is included in the Diesel Generator Comprehensive Reliability Report (AECM-84/0103) and PRD 84/03 (AECM-84/0105).

Initially the defective pushrods in both Division I and Division II diesels were replaced with spares and an interim inspection program was implemented.

These pushrods have now been replaced with new rods designed by Transamerica Delaval, Inc. The new design consists of a tubular steel shaft which is friction welded to cylinders of alloy steel on each end. The ends are then machine finished and hardened. The changes in materials and manufacturing processes should prevent recurrence. This is submitted as a final report.

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

34 MAR 16 A10:52

March 8, 1984

NUCLEAR PRODUCTION DEPARTMENT

THEY WERE CITED FOR THIS

DIV 2

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File: 0260/L-835.0
Update Report - Division II Diesel Generator Shutdown Due to Fuel Line Leak
LER 83-179/03 X-1
AECM-84/0138

This letter submits an update to a previous report submitted on December 6, 1983. The event for which the report was submitted occurred on November 4, 1983, during a seven day maintenance run, when the Division II Diesel Generator was shutdown upon discovery of a fuel oil return line leak. Upon restart, after repair of the fuel leak, the diesel generator tripped due to isolation of fuel supply valve F016B. The requirements of Technical Specification 3.8.1.1 were met. This was reported pursuant to Technical Specification 4.8.1.1.3. Per Regulatory Position C.2.e(2) and (3) of Regulatory Guide 1.108 these were not valid failures.

Corrective action associated with the failure to restore the fuel supply valve (F016B) after repair of the damaged fuel oil return line is expected to be complete by March 20, 1984. This is a final report. Attached is LER 83-179/03 X-1 with Supplementary Information.

Yours truly,

L. F. Dale
Manager of Nuclear Services

EBS/SHH:rg
Attachment

cc: See next page

8403260064

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. T. B. Conner (w/o)
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk (w/a)
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

(7-77) Update Report - Previous Report Date 12/6/83

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | M S G G S 1 (2) | 0 0-1 0 0 0 0 0-1 0 0 (3) | 4 | 1 1 1 1 (4) | (5)

LICENSEE CODE | LICENSE NUMBER | LICENSE TYPE | ST CAT

CON'T

0 1 | REPORT SOURCE: L (6) | 0 5 0 0 0 4 1 6 (7) | 1 1 0 5 8 3 (8) | 0 3 0 8 8 4 (9)

DOCKET NUMBER | EVENT DATE | REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 3 | On 11/4/83 during a 7 day maintenance run, the Div. II Diesel Generator
0 3 | was shutdown upon discovery of a fuel oil return line leak. Upon
0 4 | restart, after repair of the fuel leak, the D/G tripped due to isolation
0 5 | of fuel supply valve F016B. Per R.G.1.108, these were not valid failures
0 6 | because the diesel ran for longer than 1 hour at greater than 50% load
0 7 | and due to operator error. The requirements of T.S.3.8.1.1 were met.
0 8 | This is reported pursuant to T.S.4.8.1.1.3. This is a final report.

SYSTEM CODE: E E (11) | CAUSE CODE: E (12) | CAUSE SUBCODE: B (13) | COMPONENT CODE: E N G I N E (14) | COMP. SUBCODE: Z (15) | VALVE SUBCODE: Z (16)

(17) LER RO REPORT NUMBER: EVENT YEAR 8 3 | — | SEQUENTIAL REPORT NO. 1 7 9 | / | OCCURRENCE CODE 0 3 | REPORT TYPE X | — | REVISION NO. 1

ACTION TAKEN: A (18) | FUTURE ACTION: X (19) | EFFECT ON PLANT: Z (20) | SHUTDOWN METHOD: Z (21) | HOURS: 0 0 0 0 (22) | ATTACHMENT SUBMITTED: Y (23) | NPRD-4 FORM SUB.: N (24) | PRIME COMP. SUPPLIER: A (25) | COMPONENT MANUFACTURER: D 0 5 5 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | The fuel line leak was a result of accidental damage to the tubing by
1 1 | personnel. The fuel line was replaced. The cause of the failure to re-
1 2 | store the isolated valve was personnel error & procedural inadequacy. An
1 3 | Ops. section directive is being revised to ensure that deviations in
1 4 | valve positions due to emergency situations are documented & controlled.

FACILITY STATUS: B (28) | % POWER: 0 0 2 (29) | OTHER STATUS (30): NA | METHOD OF DISCOVERY: B (31) | DISCOVERY DESCRIPTION (32): Maintenance Run

1 6 | ACTIVITY RELEASED: Z (33) | CONTENT OF RELEASE: Z (34) | AMOUNT OF ACTIVITY (35): NA | LOCATION OF RELEASE (36): NA

PERSONNEL EXPOSURES: NUMBER 0 0 0 (37) | TYPE (38) | DESCRIPTION (39): NA

1 7

PERSONNEL INJURIES: NUMBER 0 0 0 (40) | DESCRIPTION (41): NA

1 8

LOSS OF OR DAMAGE TO FACILITY (43): TYPE Z (42) | DESCRIPTION: NA

1 9

PUBLICITY: ISSUED N (44) | DESCRIPTION (45): NA

2 0

NRC USE ONLY

NAME OF PREPARER: R. W. Byrd | PHONE:

Supplementary Information to
LER 83-179/03 X-1

Mississippi Power & Light Company
Grand Gulf Nuclear Station - Unit 1
Docket No. 50-416

Technical Specification Involved: 3.8.1.1
Reported Under Technical Specification: 6.9.1.13.b

Event Narrative

On November 4, 1983, at approximately 2345 hours, while operating the Division 2 Diesel Generator for a seven day test run, the engine was shutdown upon discovery of a fuel leak on the fuel oil return line. The fuel line was replaced and the diesel generator was restored to service at approximately 0220 hours on November 5, 1983.

At 0245 hours, the diesel generator failed while attempting to restart the engine following the above repair work. A Limiting Condition for Operation (LCO) was entered again under Technical Specification 3.8.1.1. The immediate investigation found that the fuel oil supply valve from the fuel tank which was isolated upon discovery of the leak had not been realigned properly. The immediate actions taken were to perform the proper system lineup per the System Operating Instructions and to counsel operators involved.

The cause of the fuel line leak is attributed to damage to the tubing by personnel working in the area.

An Operations section directive is being revised to ensure that deviations in valve positions due to emergency situations are documented and controlled. The directive will require affected valves to be logged by both number and description and clearance tags placed on the valves as soon as possible. The revised directive is expected to be implemented by March 20, 1984.

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

84 FEB 16 A8:57

DIESEL 12

February 7, 1984

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File: 0260/L-835.0
Update Report - Diesel Generator 12
Declared Inoperable Due to a
Fuel Oil Leak
LER 83-167/03 X-1
AECM-84/0040

This letter submits an update to a previous report submitted on November 21, 1983. The event for which the report was submitted occurred on October 22, 1983, when Diesel Generator 12 was intentionally secured when a leak developed in the fuel oil filter differential pressure instrument line. The diesel was declared inoperable and a Limiting Condition for Operation was entered pursuant to Technical Specification 3.8.1.1. This was reported pursuant to Technical Specification 6.9.1.13.b.

The tubing failure was caused by rubbing against a diesel generator air box eventually causing a rupture. All fuel oil tubing on both Division 1 and 2 diesel generators was inspected for damage or similar deficiencies. Tubing will be replaced and rerouted where necessary prior to the next startup. This is a final report. Attached is LER 83-167/03 X-1 with Supplementary Information.

Yours truly,

L H Hobbs

for L. F. Dale
Manager of Nuclear Services

EBS/SHH:rg
Attachment

cc: See next page

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. T. B. Conner (w/o)
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk (w/a)
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

LICENSEE EVENT REPORT

CONTROL BLOCK: | | | | | | | (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 | M S G G S 1 (2) 0 0 - 0 0 0 0 0 - 0 0 (3) 4 1 1 1 1 (4) | | (5)
LICENSEE CODE — LICENSE NUMBER — LICENSE TYPE — CAT

CON'T 01 REPORT SOURCE L (6) 0 5 0 0 0 4 1 6 (7) 1 0 2 2 8 3 (8) 0 2 0 7 8 4 (9)
DOCKET NUMBER — EVENT DATE — REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 On October 22, 1983, D/G 12 was intentionally secured when a leak which
03 was considered a potential fire hazard developed in the fuel oil filter
04 differential pressure instrument line. The engine had operated approx.
05 27 hours of a 7 day surv. run. The diesel was declared inoperable and an
06 LCO was entered pursuant to T.S.3.8.1.1. D/G 11 and 13 were operable.
07 D/G 12 remained inoperable for 4.5 hours. This is considered a non-valid
08 failure pursuant to Regulatory Position C.2.e(2) of R.G. 1.108.

SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
EE (11)	B (12)	C (13)	ENGINE (14)	Z (15)	Z (16)

(17) LER/RO REPORT NUMBER

EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
83	—	167	/	03	X	—	1

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
A (18)	Z (19)	Z (20)	Z (21)	0000	Y (23)	N (24)	A (25)	D055 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The tubing rubbed against a D/G air box which eventually caused a
11 rupture in the tubing due to vibration. The tubing was replaced and
12 routed to prevent rubbing. Division 1 and 2 D/G's will be inspected for
13 other similar deficiencies. Fuel oil tubing found damaged or rubbing is
14 being replaced. This is submitted as a final report.

15 FACILITY STATUS: 6 (28) % POWER: 000 (29) OTHER STATUS (30): NA METHOD OF DISCOVERY: B (31) DISCOVERY DESCRIPTION (32): Surveillance Testing

16 ACTIVITY RELEASED: Z (33) CONTENT OF RELEASE: Z (34) AMOUNT OF ACTIVITY (35): NA LOCATION OF RELEASE (36): NA

PERSONNEL EXPOSURES
17 NUMBER: 000 (37) TYPE: Z (38) DESCRIPTION (39): NA

PERSONNEL INJURIES
18 NUMBER: 000 (40) DESCRIPTION (41): NA

LOSS OF OR DAMAGE TO FACILITY (43)
19 TYPE: Z (42) DESCRIPTION: NA

PUBLICITY
20 ISSUED: N (44) DESCRIPTION (45): NA

NRC USE ONLY

NAME OF PREPARER: Ron Byrd PHONE:

Supplementary Information to
LER 83-167/03 X-1

Mississippi Power & Light Company
Grand Gulf Nuclear Station - Unit 1
Docket No. 50-416

Technical Specification Involved: 3.8.1.1
Reported Under Technical Specification: 6.9.1.13.b

Event Narrative

On October 22, 1983, during a 7 day surveillance run, the Division 2 Diesel Generator developed a leak in the fuel oil filter differential pressure instrument line. The engine was secured as the leak was considered a potential fire hazard. The tubing failure was caused by rubbing against a diesel generator air box eventually causing a rupture. The tubing was replaced.

All fuel oil tubing on both Division 1 and 2 diesel generators was inspected for damage or similar deficiencies. Some damaged tubing was found on both diesel generators. Several fuel oil supply lines to fuel injector pumps on the Division 2 Diesel Generator were found touching against coupling nuts on the air start supply header. All deficiencies have been recorded on Material Non-Conformance Report's (MNCRs') 0021/84, 0022/84, 0023/84 and 0033/84. Tubing will be replaced and rerouted where necessary. Estimated completion is prior to the next Startup.

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

January 13, 1984

NUCLEAR PRODUCTION DEPARTMENT

U. S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File 0260/L-835.0
Update Report - Division 1 Diesel Generator Shutdown Due to Failure of Exhaust Gaskets on RB1 and LB5 Cylinders
LER 83-136/03 X-3
AECM-84/0008

This letter submits an update to the previous report submitted on October 12, 1983. The event for which the report was submitted occurred on August 30, 1983, when during a 24 hour surveillance test run, the Division 1 Diesel Generator was shutdown when the right bank number 1 and left bank number 5 cylinder exhaust gaskets failed and a crack and two broken welds were discovered on the intercoolers. The diesel was 98 minutes into the test run. This was considered a valid successful test pursuant to Regulatory Position C.2.e(3) of Regulatory Guide 1.108. This was reported pursuant to Technical Specification 4.8.1.1.3 and 6.9.1.13.b.

The latest status of our investigation into the cause and corrective actions for the above event is provided in attached interim LER 83-136/03 X-3 with Supplementary Information. An update is expected to be submitted by April 1, 1984.

Yours truly,

S H Hobbs

for L. F. Dale
Manager of Nuclear Services

EBS/SHH:sad
Attachment

cc: (See Next Page)

8401300179

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. T. B. Conner (w/o)
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk (w/a)
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

NRC FORM 366 (7-77) Update Report - Previous Report Date 10/12/84 U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT Attachment to AECM-84/0008

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | LICENSEE CODE (2) | LICENSE NUMBER (3) | LICENSE TYPE (4) | 57 CAT 58 (5)

CON'T

0 1 | REPORT SOURCE L (6) | 0 5 0 0 0 4 1 6 (7) DOCKET NUMBER | 0 8 3 0 8 3 (8) EVENT DATE | 0 1 1 8 4 (9) REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | On 8-30-83, during a 24-hour surveillance test run, the Div. I D/G was

0 3 | shutdown when the RB1 and LB5 cylinder exhaust gaskets failed and a

0 4 | crack and 2 broken welds were discovered on the intercoolers. The diesel

0 5 | was 96 minutes into the test run. Per Reg. Guide 1.108, para C.2.e.(3),

0 6 | this was a valid successful test. There was no effect on the health and

0 7 | safety of the public nor was there a threat to plant safety. This is

0 8 | reported pursuant to T.S.4.8.1.1.3. This is an interim report.

0 9 | SYSTEM CODE E E (11) | CAUSE CODE B (12) | CAUSE SUBCODE B (13) | COMPONENT CODE E N G I N E (14) | COMP SUBCODE Z (15) | VALVE SUBCODE Z (16)

(17) LER/RO REPORT NUMBER | EVENT YEAR 8 3 | SEQUENTIAL REPORT NO. 1 3 6 | OCCURRENCE CODE 0 3 | REPORT TYPE X | REVISION NO. 3

ACTION TAKEN A (18) | FUTURE ACTION F (19) | EFFECT ON PLANT Z (20) | SHUTDOWN METHOD Z (21) | HOURS 0 0 0 0 (22) | ATTACHMENT SUBMITTED Y (23) | NPRD-4 FORM SUB. N (24) | PRIME COMP. SUPPLIER A (25) | COMPONENT MANUFACTURER D 0 5 5 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | The gasket failures were caused by loose manifold bolts and have been

1 1 | replaced. A crack in the base metal of the LB intercooler was caused

1 2 | by the turbocharger misalignment and mounting problems reported in

1 3 | LER 83-107/03 X-1. Two broken stay rod welds on the RB intercooler were

1 4 | due to insufficient filler welds. The crack & welds were weld repaired.

1 5 | FACILITY STATUS 6 (28) | % POWER 0 0 0 (29) | OTHER STATUS (30) NA | METHOD OF DISCOVERY A (31) | DISCOVERY DESCRIPTION (32) Operator Observation

1 6 | ACTIVITY RELEASED Z (33) | CONTENT OF RELEASE Z (34) | AMOUNT OF ACTIVITY (35) NA | LOCATION OF RELEASE (36) NA

1 7 | PERSONNEL EXPOSURES NUMBER 0 0 0 (37) | TYPE Z (38) | DESCRIPTION NA

1 8 | PERSONNEL INJURIES NUMBER 0 0 0 (40) | DESCRIPTION (41) NA

1 9 | LOSS OF OR DAMAGE TO FACILITY TYPE Z (42) | DESCRIPTION NA

2 0 | PUBLICITY ISSUED N (44) | DESCRIPTION (45) NA | NRC USE ONLY

NAME OF PREPARER Ron Byrd PHONE:

SUPPLEMENTARY INFORMATION TO
LER 83-136/03 X-3

Mississippi Power & Light Company
Grand Gulf Nuclear Station - Unit 1
Docket No. 50-416

Technical Specification Involved: 4.8.1.1.3
Reported Under Technical Specification: 6.9.1.13.b

Event Narrative:

The bolts used to attach the exhaust manifolds to the Diesel Generator exhaust ports were 304 stainless steel, Transamerica Delaval Inc. part number GB-079-118, (item 63, drawing 02-380-06). The bolts were difficult to unscrew and a visual inspection revealed high temperature discoloration. The failure of the bolts appeared to be from a combination of heat and fatigue stresses. The bolts were replaced with 316 stainless steel until replacement bolts are obtained.

A design change is currently under consideration to replace the 304 stainless steel bolts with 400 series stainless steel which is more suitable for temperatures encountered in this service.

The crack in the base metal of the LB intercooler was caused by vibration that was induced by the turbocharger misalignment and mounting problems reported in LER 83-107/03 X-1.

The broken stay rod welds on the RB intercooler were caused by insufficient filler welds. The failures may have been aggregated by the turbocharger bolt problem reported in LER 83-107/03 X-1. The filler welds were specified in the vendor manual to be 1/4" but were discovered to be less than 1/8". The broken welds resulted in small air leaks at the juncture point between the rods and the intercooler. The welds were removed and the area was weld repaired to specifications.

There was no effect on the health and safety of the public nor was there a threat to plant safety. All Technical Specification action requirements were met. This is reported pursuant to Technical Specification 4.8.1.1.3 and is submitted as an interim report. An update is expected to be submitted by April 1, 1984.

I51sd1

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

8 A8:50

NUCLEAR PRODUCTION DEPARTMENT

January 3, 1984

Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 3100
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File 0260/15525/15526/16694.4
PRD-83/17, Interim Report,
Diesel Generator Low Pressure
Fuel Oil Line Failure
AECM-83/0822

On December 30, 1983, Mississippi Power & Light Company notified Mr. D. Verelli, of your office, of a Reportable Deficiency at the Grand Gulf Nuclear Station (GGNS). The deficiency concerns the failure of a fuel oil line immediately adjacent to a male branch tee on the Unit 1, Division I diesel generator.

MP&L has evaluated this deficiency and determined that it is reportable under the provisions of 10CFR21 for Unit 1. The investigation is continuing to determine reportability or corrective action required for Unit 2.

Details are provided in our attached Interim Report. MP&L expects to submit the next report by April 13, 1984.

Yours truly,

for J. P. McGaughy, Jr.

RDC:ky

ATTACHMENT

cc: See page 2

8401120350

Mr. J. B. Richard
Mr. R. B. McGehee
Mr. T. B. Conner

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. G. B. Taylor
South Miss. Electric Power Association
P. O. Box 1589
Hattiesburg, MS 39401

INTERIM REPORT FOR PRD-83/17

1. Name and address of the individual ... informing the commission:

J. P. McGaughy, Jr.
Vice-President, Nuclear
P.O. Box 1640
Jackson, Mississippi 39205

This deficiency was also reported under 10CFR21 by Transamerica Delaval to the NRC in their letter dated September 21, 1983.

2. Identification of the facility ... which ... contains a deficiency:

Grand Gulf Nuclear Station (GGNS) Unit 1
Port Gibson, Mississippi 39150

3. Identification of the firm ... supplying the basic component which ... contains a deficiency:

The low pressure fuel line assemblies were manufactured by Transamerica Delaval, Inc., and supplied to Grand Gulf by Bechtel Power Corporation, Gaithersburg, Maryland.

4. Nature of the deficiency ... and the safety hazard which ... could be created by such a deficiency ...:

A. Description of the Deficiency

The deficiency involves a condition on the Unit 1, Division I diesel generator where the failure of a fuel oil line immediately adjacent to a male branch tee caused a fire in the Division I diesel generator area. During the investigation following the fire it was discovered that a required support was missing from the fuel oil line.

The failed line was forwarded by MP&L to Middle South Services, Inc., (MSS) for metallurgical evaluation. The MSS metallurgical evaluation report indicated that the fuel oil line failure was due to high cycle fatigue caused by a combination of vibration from the turbocharger and the absence of the required support on the fuel oil line.

B. Analysis of Safety Implications

The lack of the proper support on the low pressure fuel line could result in failure of the line. Since fuel is supplied via this line to the engine, a failure of the line would cause the engine to be inoperable. The support was absent on both the Unit 1, Division I and II diesel generators, thus failures of the lines could result in both diesel generators' inability to perform their design functions in the event of an LOCA.

on which the information of such deficiency ... was obtained.

ippi Power and Light received information of the deficiency on
r 6, 1983. We reported the deficiency to Mr. D. Verelli, of
ice, as being reportable under the provisions of 10CFR21 for
December 30, 1983. The MP&L "Responsible Officer," Mr. J. P.
, Jr., will be notified of the reportability requirements of
iency when he returns to his office.

ase of the basic component ... the number and location of all
mponents.

two (2) diesel generators on each Unit at Grand Gulf for a
four (4). Other locations of defective components were listed
merica Delaval in their notification letter to the NRC of
21, 1983. We do not have knowledge of the location of other
equipment.

... responsible for the action; and the length of time that
... taken to complete the action.

orrective Actions Taken

The missing fuel oil line support has been installed on the Division I diesel generator.

Design Change Package 83/4096 for installing the fuel oil line support on the Division II diesel generator has been issued for construction.

The reportability of this deficiency for Unit 2 has not been determined at this time. However, our Architect/Engineer has issued QAR F-432 to track the concern for Unit 2.

esponsible Individual

nit 1
. E. Cross
lant Manager
ississippi Power & Light Co.

Unit 2
T. H. Cloninger
Unit 2 Project Manager
Mississippi Power & Light Co.

ength of Time to Complete Actions

Corrective action for the Unit 1, Division I diesel generator is complete.

Corrective actions on the Unit 1, Division II diesel generator are scheduled to be complete by January 30, 1984.

3. Date of completion for corrective actions for Unit 2 is not known at this time.

8. Any advice related to the deficiency ... that has been, is being, or will be given to purchasers or licensees:

As the deficiency did not originate with MP&L, we have no advice to offer.

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

84 MAR 14 A8:37

March 5, 1984

NUCLEAR PRODUCTION DEPARTMENT

U. S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File 0260/L-835.0
Special Report 84-005/0 - HPCS
Diesel Generator Trip
AECM-84/0116

On February 1, 1984, at 0340 hours the HPCS Diesel Generator tripped on low Lube Oil Pressure during a routine surveillance. A time delay relay required to be set at 60 seconds to allow time for the engine driven lube oil pump to develop pressure was found set at approximately 6.5 seconds. This drift/failure of the time delay relay enables a premature lube oil pressure trip. The trip however is bypassed in the LOCA Emergency Mode. A second start attempted shortly after the trip would be successful due to the pump and piping being primed and the Low Lube Oil Pressure Shutdown signal lasting shorter than 6.5 seconds.

Relay TD5 is a pneumatic delay type Agastat relay (Model No. 7012) rated for 20 to 200 second application. The relay was last calibrated on October 17, 1981. Since that time, there have been greater than 200 starts. The relay is cycled on every start.

The relay was replaced with an identical component and similar type relays were calibrated. The diesel generator remained out of service for approximately 13.5 days. The relay will be calibrated on an eighteen month frequency.

The failure is considered non-valid pursuant to position C.2.e(2) of Regulatory Guide 1.108. Events of HPCS Diesel Generator trips which could not previously be attributed to any component malfunctions were LER 83-101 on July 18, 1983, and LER 83-189 on December 7, 1983. Data from the incident on July 18, 1983, is not sufficient to associate this trip with the TD5 relay failure. Therefore, the trip remains classified as a valid failure. However, the data reported from the trip on December 7, 1983, and subsequent troubleshooting efforts show sufficient reason to attribute this trip to the failed relay. The trip on December 7 is considered invalid. LER 83-189 will be revised.

8403200115

MISSISSIPPI POWER & LIGHT COMPANY

The current number of valid failures is one in the last one hundred. The current testing frequency is once per month. This Special Report is submitted pursuant to Regulatory Guide 1.108.

Yours truly,

J. W. Smith for

L. F. Dale
Manager of Nuclear Services

EBS/SHH:sad

cc: Mr. J. B. Richard
Mr. R. B. McGehee
Mr. T. B. Conner
Mr. G. B. Taylor

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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

84 MAR 15 A8:38

March 12, 1984

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File 0260/L-835.0
Special Report 84-010/0 -
Division 2 Diesel Generator
Failure to Start
AECM-84/0160

While in Cold Shutdown on February 10, 1984, at 1747 hours, Diesel Generator 12 failed to start on a manual initiation signal from the Control Room. The start attempt was for maintenance operation following replacement of the engine's pushrods. The diesel generator was already inoperable due to it being under a maintenance clearance to perform the work. An LCO condition was in effect due to Diesel Generator 11 being removed from service at 1030 hours on February 10 for turbocharger bolt replacement.

The procedure addressing the adjustment of the hydraulic valve lifters contained an erroneous step which resulted in the improper adjustment of the lifters during replacement of the pushrods. This error resulted in the diesel generator's failure to start. The failure is considered invalid pursuant to position C.2.e.(1) of Regulatory Guide 1.108.

The valve lifters were adjusted correctly and Diesel Generator 12 was returned to service at 1645 hours on February 11. The procedure has been revised. The number of valid failures is one in the last 100 tests. The testing frequency is once per 31 days. This Special Report is submitted pursuant to Regulatory Guide 1.108.

Yours truly,

D. W. Smith for

L. F. Dale
Manager of Nuclear Services

EBS/SHH:lm

cc: (See Next Page)

5403190216

cc: Mr. J. B. Richard
Mr. R. B. McGehee
Mr. T. B. Conner
Mr. G. B. Taylor

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

AH2

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

84 JUN 5 P12 : 22

June 1, 1984

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File: 0260/L-835.0
Special Report 84-023/0 -
Division 1 Diesel Generator
Failure to Start
AECM-84/0293

On May 5, 1984 at 0943 hours, the Division 1 Diesel Generator failed during a start attempt for the monthly functional surveillance. The engine turned over approximately one revolution before stopping. The Division 2 and 3 Diesel Generators were operable and the plant was in Cold Shutdown at the time of the event.

The diesel generator was instrumented for troubleshooting and testing, but the investigation revealed no component problems. Ten successful starts were accomplished during the troubleshooting effort. A previous occurrence on March 24, 1984 was reported in LER 84-016. The troubleshooting efforts at that time failed to identify any component malfunctions. The diesel generator was declared operable following completion of the extensive testing. The diesel generator was out of service approximately 16 hours.

In accordance with Regulatory Guide 1.108 and Technical Specification 4.8.1.1.3, the failure to start is reported as a valid failure. This is the second valid failure in the last 100 valid starts and the testing interval has been increased to at least once each 14 days in accordance with Regulatory Guide 1.108 position c.2.d.

The monthly functional surveillance is being revised to include additional instrumentation to monitor solenoid start signals on both Division 1 and Division 2 diesel generators in a continuing effort to identify

the cause of the failure. This is submitted as a final report. A revised report will be submitted should any additional information become available.

Yours truly,

D. W. Smith for

L. F. Dale
Director of Nuclear Licensing & Safety

EBS/SHH:rg

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

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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

March 2, 1984

84 MAR 8 P1:03

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File: 0260/L-835.0
Special Report 84-007/0 Diesel Generator Turbocharger Bolt Failure
AECM-84/0135

On two occasions, January 31 and February 10, 1984, bolts securing the Division 1 Standby Diesel Generator left bank turbocharger failed during the performance of 100 hour test runs. In each case the diesel generator was shutdown as a precautionary measure. There was no noticeable effect on engine performance or operation.

A previous similar occurrence on July 26, 1983 was reported in LER 83-107. As corrective action the left bank turbocharger was replaced, longer mounting bolts were installed, and equipment associated with the turbochargers was realigned.

On January 31, 1984 at 0905 hours a maintenance inspection with the engine operating revealed two bolts missing from the turbocharger. The results of a subsequent examination were that the capscrews failed due to fatigue crack propagation induced from turbocharger mount misalignment. The right bank turbocharger mounting bolts were inspected and found secure. The turbocharger was realigned and the 100 hour test run attempted again.

On February 10, 1984 at 1030 hours during the next test run, it was noted that three of the four left bank turbocharger bolts had failed. The engine was again secured. The cause of the failure was determined to be a slight misalignment between the turbocharger exhaust and the turbocharger to intercooler adapter. The misalignment has been corrected.

The diesel generator was loaded successfully to 7000kW for 21 hours before the shutdown on January 31 and 72 hours before the shutdown on February 10. Therefore, the tests are considered valid and successful in accordance with Position C.2.e.(3) of Regulatory Guide 1.108. The number of valid failures in the last 100 tests remains at one (see Special Report No. 84-005/0) and the required testing frequency is once per 30 days.

8403130159

The event of February 10 was originally reported to Mr. H. Bailey of your staff as a four hour reportable occurrence. The failure has since been determined to be isolated to the left bank turbocharger on the Division 1 Diesel Generator. LER 83-107 will be updated to include these failures. Any further information on this subject will be provided in an update to LER 83-107. This report is submitted in accordance with Regulatory Guide 1.108.

Yours truly,

L. F. Dale
Manager of Nuclear Services

EBS/SHH:rg

cc: Mr. J. B. Richard
Mr. R. B. McGehee
Mr. T. B. Conner
Mr. G. B. Taylor

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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

84 MAR 26 A10:19

March 21, 1984

NUCLEAR PRODUCTION DEPARTMENT

U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

Attention: Mr. J. P. O'Reilly, Regional Administrator

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File 0260/L-835.0
Special Report 84-003/1 - Update Report - Diesel Generator Trip
AECM-84/0174

This is an update to a previous report submitted on February 13, 1984, for the event described below:

At 1210 on January 12, 1984, while the plant was in Cold Shutdown, Standby Diesel Generator 12 tripped on reverse power while running in parallel with offsite power during a retest following maintenance. A control rectifier diode in the voltage regulator circuit malfunctioned causing the diesel generator output voltage to drop. Since the diesel generator was running parallel with offsite power, this voltage drop caused the generator to trip on reverse power. In the emergency operating mode the reverse power trip is bypassed. In addition, the diesel generator would not be in parallel with offsite power, so a voltage drop would not have caused a reverse power condition. Therefore, this is reported pursuant to Regulatory Guide 1.108 and Technical Specification 4.8.1.1.3 as an invalid failure. At the time there were two valid failures in the last 100 valid tests. The testing frequency was once per 7 days. The voltage regulator circuit was switched to the standby excitation control rectifier and the retest continued.

The control rectifier diode which malfunctioned was tested statically and no shorts or other problems were found. It was then tested dynamically by running the diesel generator with that excitation

DN1

8403300067

control rectifier in use and it alarmed twice without causing the trip. An intermittent short was suspected, so the control rectifier was replaced. This is a final report.

Yours truly,

L. F. Dale
Manager of Nuclear Services

EBS/SHH:lm

cc: Mr. J. B. Richard
Mr. R. B. McGehee
Mr. T. B. Conner
Mr. G. B. Taylor

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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

April 23, 1984

NUCLEAR PRODUCTION DEPARTMENT

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Gentlemen:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File: 0260/L-835.0
Containment Isolation and Diesel Generator Failure to Start
LER 84-016-0
AECM-84/0242

Attached is Licensee Event Report (LER) 84-016-0 which is a final report.

Yours truly,

L. F. Dale
Manager of Nuclear Services

EBS/SHH:rg
Attachment

cc: Mr. J. B. Richard (w/a)
Mr. R. B. McGehee (w/o)
Mr. T. B. Conner (w/o)
Mr. G. B. Taylor (w/o)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. J. P. O'Reilly, Regional Administrator (w/a)
U. S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

8404260170

NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO 3150-0104
EXPIRES 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Grand Gulf Nuclear Station - Unit 1	0 5 0 0 0 4 1 6	1 OF 0 2

TITLE (4)

Containment Isolation and Diesel Generator Failure to Start

EVENT DATE (5)			LER NUMBER (6)					REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR		SEQUENTIAL NUMBER		REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
											N/A	0 5 0 0 0
0 3	2 4	8 4	8 4	-	0 1 6	-	0 0	0 4	2 3	8 4		0 5 0 0 0

OPERATING MODE (9)	4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
POWER LEVEL (10)	0 0 0	20.402(b)		20.405(c)	X	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)		50.36(c)(1)	X	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)	Reg Guide 1.108
		20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Jerry L. Parker/Licensing Engineer	6 0 1 4 3 7 - 2 1 4 9

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

While performing a special test to measure the response time of several LPCS and LPCI "A" isolation valves, a procedure error caused a Division 1 containment isolation and generated an auto start signal to the Division 1 Diesel Generator. The diesel generator failed to start.

NRC Form 366A (9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO 3150-0104
EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Grand Gulf Nuclear Station - Unit 1	0 5 0 0 0 4 1 6	8 4	— 0 1 6	— 0 0	0 2 OF 0 2

TEXT (If more space is required, use additional NRC Form 366A's) (17)

At 0135 hours on March 24, 1984, while the plant was in Cold Shutdown, a special test was being performed to measure the response time of several LPCS and LPCI "A" isolation valves. An ECCS Test Switch had been installed into the isolation logic to allow simulating an ECCS actuation signal. Installation of the ECCS Test Switch also prevents the diesel generator start and closure of the non-ECCS isolation valves. After actuation of the logic, the procedure directed the removal of the ECCS test switch before the logic had been reset. When this was done, the automatic bypass signal was removed and a full Division 1 containment isolation resulted. This isolation included Shutdown Cooling isolation, RWCU isolation, trip of CRD, auto start of Standby Service Water, and auto start of the Drywell Purge Compressor. A valid start signal was also sent to the Division 1 Diesel Generator, but it failed to start.

The containment isolation was a direct result of the approved temporary procedure which was not technically correct. A memo was written to all engineers stressing the necessity of technical adequacy in the writing and review of procedures. Shutdown Cooling was returned to operation in 10 minutes. Full restoration from the containment isolation was accomplished in about 30 minutes. No equipment was damaged by the isolation and the event had no safety consequences.

Extensive evaluation and testing was performed to determine the cause of the diesel generator failure to start. Investigation of the diesel generator emergency start circuitry revealed no component failures or inadequacies. When given another start signal, the diesel generator started and ran with no problems. Although the conditions of the failure to start were repeated, a total of eleven actual diesel generator starts were performed, and individual components of the start logic and mechanism were repeatedly tested. The failure to start could not be repeated and nothing could be found which could have caused the failure. After all troubleshooting and functional testing, which revealed no problems, the functional surveillance test was performed on the diesel generator and it was declared operational.

The Division 1 Diesel Generator failure to start was an isolated and unrepeatable event. In assessment of the safety consequences of this failure, it is not likely to occur again in light of the extensive evaluation and testing which could not repeat the problem. However, if it were to occur again when needed, the redundant Division 2 Diesel Generator is available to perform the same functions.

In accordance with Regulatory Guide 1.108 and Technical Specification 4.8.1.1.3, this Division 1 Diesel Generator failure to start is reported as a valid failure. This is the first valid failure in the last 100 valid starts. The current surveillance test interval is monthly in accordance with Regulatory Guide 1.108 position C.2.d. This is a final report.

P. O. Kelly
PRP

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

February 13, 1984

NUCLEAR PRODUCTION DEPARTMENT

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Gentlemen:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-13
File 0260/L-835.0
Special Report 84-003/0,
Diesel Generator Trip
AECM-84/0075

Technical Specification 4.8.1.1.3 requires that all diesel generator failures be reported pursuant to Technical Specification 6.9.1. As of January 1, 1984, the reporting requirements of Technical Specifications 6.9.1.12 and 6.9.1.13 were superseded by 10CFR 50.73, therefore, diesel generator failures are not reportable as an Licensee Event Report (LER) unless they fall under the reporting requirements of the new LER rule.

Mississippi Power & Light (MP&L) is currently preparing proposed changes to the Technical Specifications to remove the reporting requirements of Technical Specifications 6.9.1.12 and 6.9.1.13 and all references to these reporting requirements from individual Technical Specifications. The proposed changes include a change to Technical Specification 4.8.1.1.3 which will make all diesel generator failures reportable as a Special Report pursuant to Technical Specification 6.9.2 unless the failure falls under 50.73 reporting requirements. For the sake of consistency, until these changes are submitted and approved, MP&L will report these type diesel generator failures as Special Reports. The following diesel generator trip falls in this category:

At 1210 on January 12, 1984, while the plant was in Cold Shutdown, Standby Diesel Generator 12 tripped on reverse power while running in parallel with offsite power during a retest following maintenance. A control rectifier diode in the voltage regulator circuit malfunctioned causing the diesel generator output voltage to drop. Since the diesel generator was running parallel with offsite power, this voltage drop caused the generator to trip on reverse power. In the emergency operating mode the reverse power trip is bypassed. In addition, the diesel generator would not be in parallel with offsite power, so a voltage drop would not have caused a reverse power condition. Therefore,

8402170277

this is reported pursuant to Regulatory Guide 1.108 and Technical Specification 4.8.1.1.3 as an invalid failure. At the time there were two valid failures in the last 100 valid tests. The testing frequency was once per 7 days. The voltage regulator circuit was switched to the standby excitation control rectifier and the retest continued. Investigation is still in progress to determine the mode of failure of the control rectifier diode. This is an interim report. An update is expected to be submitted by March 12, 1984.

Yours truly,

SHHobbs

for/ L. F. Dale
Manager of Nuclear Services

EBS/SHH:sad

cc: Mr. J. B. Richard
Mr. R. B. McGehee
Mr. T. B. Conner
Mr. G. B. Taylor

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. J. P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303

J85sd2