



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report No.: 50-416/85-22

Licensee: Mississippi Power and Light Company
Jackson, MS 39205

Docket No.: 50-416

License No.: NPF-29

Facility Name: Grand Gulf

Inspection Conducted: June 16 - July 19, 1985

Inspectors:	<u><i>R. C. Butcher</i></u>	<u>8/8/85</u>
	R. C. Butcher, Senior Resident Inspector	Date Signed
	<u><i>J. L. Caldwell</i></u>	<u>8/8/85</u>
	J. L. Caldwell, Resident Inspector	Date Signed
	<u><i>C. Brooks</i></u>	<u>8/8/85</u>
	C. Brooks	Date Signed
Approved by:	<u><i>V. W. Panciera</i></u>	<u>8/8/85</u>
	V. W. Panciera, Chief Project Section 2B Division of Reactor Projects	Date Signed

SUMMARY

Scope: This routine inspection entailed 262 inspector-hours at the site in the areas of Operational Safety Verification, Maintenance Observation, Surveillance Observation, ESF System Walkdown, Reportable Occurrences, Followup on Previously Identified Items, In-Office Review, Survey of Licensee's Response to Selected Safety Issues, and Operating Reactor Events.

Results: Of the nine areas inspected, no apparent violations or deviations were identified in seven areas; three apparent violations were found in two areas.

REPORT DETAILS

1. Licensee Employees Contacted

- *J. E. Cross, General Manager
- *C. R. Hutchinson, Manager, Plant Maintenance
- *R. F. Rogers, Technical Assistant
- J. D. Bailey, Compliance Coordinator
- M. J. Wright, Manager, Plant Operations
- *L. F. Daughtery, Compliance Superintendent
- *D. Cupstid, Start-up Supervisor
- R. H. McAnulty, Electrical Superintendent
- *R. V. Moomaw, I&C Superintendent
- *B. Harris, Compliance Coordinator
- W. Russell, Assistant, Operations Superintendent
- L. G. Temple, Assistant, I&C Superintendent
- *W. R. Patterson, Reactor Engineering Supervisor
- *J. L. Robertson, Operations Superintendent
- *C. W. Angle, Nuclear Plant Engineering Supervisor
- *J. V. Parrish, Radiation Control Superintendent
- *A. J. Malone, Maintenance Engineer
- *S. P. Meyer, Nuclear Plant Engineering

Other licensee employees contacted included technicians, operators, security force members, and office personnel.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on July 19, 1985, with those persons indicated in paragraph 1 above. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. The licensee had no comment on the following inspection findings:

Violation (50-416/85-22-01), Secondary Containment Door Blocked Open Without Preparing an LCO. (Paragraph 5.b)

Inspector Followup Item (IFI) (50-416/85-22-02), Standby Service Water Basin Level Information Tag. (Paragraph 5.c)

Violation (50-416/85-22-03), Failure to Initiate Prompt Corrective Action for Identified Safety Problem. (Paragraph 5.d)

Inspector Followup Item (50-416/85-22-04), 10 CFR Part 21 Report on Misapplication of Switches in the Standby Liquid Control System. (Paragraph 9)

Violation (50-416/85-22-05), Failure to Follow Procedure Resulting in a Reactor Scram. (Paragraph 10)

3. Licensee Action on Previous Enforcement Matters (92702)

- a. (Closed) Unresolved Item 50-416/84-51-02; Temporary Annunciator Window. The licensee has removed the temporary label on annunciator window P-601-21A-H4 and the lamp has been electrically disarmed. This item is closed.
- b. (Closed) Unresolved Item 50-416/84-51-04; PSRC Review of Incident Reports and Design Change Packages. The licensee established two temporary Plant Safety Review Committee (PSRC) subcommittees to expedite review of about 157 backlogged incident reports and 215 design change packages. The PSRC was presented with the results of the review and concurred with subcommittee recommendations. About 14% of the design change packages were initially rejected (some of which dated back to 1981) due to inadequate 10 CFR 50.59 evaluations. Revised 50.59 evaluations were subsequently reviewed and approved. The PSRC subcommittees were dissolved after completion of the backlog review on January 30, 1985. This item is closed.
- c. (Closed) Unresolved Item 50-416/84-51-05; Inadequate Preparation of Maintenance Work Orders. The inspector reviewed Plant Quality's Deficiency Report 247-84 regarding inadequate preparation of Maintenance Work Orders (MWOs) and determined that the corrective action was adequate to preclude recurrence. Corrective action consisted of revision of administrative procedure 01-S-07-1, Control of Work on Plant Equipment and Facilities, followed by training for plant operators. The inspector also reviewed several recently prepared work orders to determine that the corrective action was effective. This item is closed.
- d. (Closed) Violation 50-416/85-49-01. The inspector reviewed the licensee's corrective actions and found them adequate. Plant Administrative Procedure 01-S-03-3, Material Nonconformance Report (MNCR), was changed to allow the operations personnel to request additional engineering evaluation, if required and memorandums were issued to the operations staff discussing the importance of proper review of MNCRs to ensure that adequate information is provided to determine system operability. The Nuclear Plant Engineering (NPE) Staff received training on how to evaluate a material nonconformance report adequately so that system operability could be determined. Therefore, if NPE personnel comply with the training they received as documented in the response to violation 50-416/84-49-01, in letter

AECM-85/0008 dated January 17, 1985, this should prevent future violations of this type.

- e. (Closed) Violation 50-416/85-09-07. The inspector reviewed the licensee's corrective actions and found them adequate. Plant Administrative Procedure 01-S-07-1, Control of Work on Plant Equipment and Facilities, was revised to define who was responsible and accountable for ensuring procedural adherence for work activities. This item is closed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Operational Safety Verification (71707)

The inspectors kept themselves informed on a daily basis of the overall plant status and any significant safety matters related to plant operations. Daily discussions were held with plant management and various members of the plant operating staff. The inspectors made frequent visits to the control room such that it was visited at least daily when an inspector was on site. Observations included instrument readings, setpoints, and recordings; status of operating systems; tags and clearances on equipment controls and switches; annunciator alarms; adherence to limiting conditions for operation; temporary alterations in effect; daily journals and data sheet entries; control room manning; and access controls. This inspection activity included numerous informal discussions with operators and their supervisors.

Weekly, when onsite, a selected ESF system is confirmed operable. The confirmation is made by verifying the following: Accessible valve flow path alignment; power supply breaker and fuse status; major component leakage, lubrication, cooling and general condition; and instrumentation.

General plant tours were conducted on at least a biweekly basis. Portions of the control building, turbine building, auxiliary building and outside areas were visited. Observations included safety related tagout verifications; shift turnover; sampling program; housekeeping and general plant conditions; fire protection equipment; control of activities in progress; radiation protection controls; physical security; problem identification systems; and containment isolation.

The following comments were noted:

- a. During a routine plant tour on June 5, 1985, the inspector discovered two five gallon cans of lubricant stored in the standby service water basin cooling tower. There were no identification markings or labels on the cans which had apparently been used for dispensing lubricant to the standby service water cooling tower fans. Administrative Procedure 07-S-06-305, Control and Use of Lubricants, which implements the

licensee's commitment to ANSI N18.7, requires that identification of lubricants shall be maintained when transferred from the manufacturer's container to lubricant containers such as oil cans or grease guns. The inspector informed the plant operations supervisor and inspected other designated lubricant storage locations for the electrical maintenance, mechanical maintenance, and operations sections. All other lubricant cans were found to be marked in accordance with procedure 07-S-06-305. Licensee representatives were unable to determine the source of the unmarked cans but suspected that they were leftovers from several months ago when excessive seal leakage forced almost shiftily oil addition to the standby service water cooling tower fans. The licensee stated that although there was no operations procedures for control of lubricant, the operators complied with the maintenance instruction (07-S-06-305). The operations standing orders will be revised to clarify this. Administrative Procedure 04-S-03-P6 was also revised to include the SSW Fan Rooms on the list of fire control areas required to be inspected for such things as uncontrolled lubricants. This should prevent recurrence of similar situations.

- b. On June 17, 1985, at approximately 3:45 p.m., the inspector found Auxiliary Building door 1A318 blocked open with a piece of wood. No one was stationed to control the door. Door 1A318 provides access from the auxiliary building to the breezeway leading to the diesel generator building and is a fire door that is also required for secondary containment integrity. Door 1A318 is an alarmed door that annunciates in the control room when the door is open. While the inspector was in the area of the open door, two licensee personnel passed through the door without shutting the door or notifying the control room the door was open. The inspector notified the control room that door 1A318 was blocked open which created a loss of secondary containment. The control room immediately sent someone to close the door. The plant was operating in mode 1 at that time. Technical Specification (TS) 3.6.6.1 requires secondary containment integrity be maintained in operational conditions 1, 2, 3 and other noted special conditions. TS 3.6.6.1, action statement a, states that in operational condition 1, 2, or 3 without secondary containment integrity, restore secondary containment integrity within four hours or be in at least hot shutdown within the next 12 hours and in cold shutdown within the following 24 hours. The licensee's investigation showed that the door handle on door 1A318 was difficult to operate. Operations had dispatched personnel to check door 1A318 several times when it alarmed in the open position. The licensee could not determine exactly how long door 1A318 was open but it did not appear to exceed the four hour limit of the action statement of TS 3.6.6.1. Operations Section Procedure (OSP) 02-S-01-17, control of Limiting Conditions for Operation, paragraph 6.1, requires the Shift Supervisor fill out an LCO report anytime the plant enters the action statement of a T.S. The shift supervisor had not filled out an LCO report. The failure to document entering an LCO is a violation and will be identified as (50-416/85-22-01).

- c. On June 18, 1985, during a tour of the control room, the inspector noticed that the information tags associated with the Standby Service Water (SSW) basin level recorders were removed. These temporary information tags were installed to ensure the operator understood the requirement to fill and vent the SSW basin syphon line anytime the basin level drops below the Technical Specification limits. The licensee committed to install these temporary tags in response to violation 50-416/84-42-01 until permanent information tags could be installed. The temporary tags have been reinstalled. The installation of permanent information tags will be tracked as IFI (50-416/85-22-02).
- d. On June 18, 1985, the inspectors noted in the night orders book, the statement that Temporary Change Notice (TCN) 10 to System Operating Instruction (SOI) 04-I-01-C11-1, Control Rod Drive Hydraulic System, had been issued to lock the manual handwheel for valves 1C11-F010 and 1C11-F011 in the closed position. Valves 1C11-F010 and 1C11-F011 are the scram discharge volume vent and drain valves. A review of the licensee's actions leading to this change revealed the following. An INPO Significant Event Report (SER) was initiated in January 1984 regarding an event at La Salle 1, where an air operated valve would not close upon demand from the control room. It was found that the handwheel for the valve had been positioned to hold the valve open. It was noted that there are similar valves by different manufacturers having handwheels that can lock the valve full open, full closed, or limit the stroke. GE recommends that the handwheel for air operated valves be locked at a position which would not affect the valve operability in the event of remote automatic operation. The licensee initiated a design change assistance request to the Bechtel Corporation requesting an evaluation as to applicability to Grand Gulf and recommendations to preclude occurrence at Grand Gulf. Bechtel's review indicated air actuated valves 1C11-F010 and 1C11-F011 did have handwheels. Valves 1C11-F180 and 1C11-F181, which will be installed during the first refueling outage, would also be effected. Nuclear Plant Engineering (NPE) received Bechtel's response on April 9, 1984. A recommendation memo dated May 20, 1985, was sent to the Plant General Manager from NPE recommending that the position of the handwheels for valves 1C11-F010 and 1C11-F011 be included in SOI 04-1-01-C11-1 and the handwheels be locked at a position which would not affect the valve operability in the event of remote automatic operation. This recommendation was also applicable to the redundant scram discharge volume vent and drain valves 1C11-F180 and 1C11-F181, scheduled to be installed during the first refueling outage. The position of the handwheels for 1C11-F010 and 1C11-F011 had not been procedurally controlled previously. 10 CFR 50, Appendix B, Criterion XVI, implemented by the licensee's NRC approved Operational Quality Assurance Program as described in their Operational Quality Assurance Manual (OQAM), requires that measures shall be established to provide for the correction of conditions adverse to quality or safety of the Grand Gulf Nuclear Station. Paragraph 16.5.3 of the OQAM states that

the procedures shall require that action be promptly initiated and adequately documented by the responsible organization to correct the condition and to determine if action is necessary to preclude its recurrence. Although the licensee was made aware of the potential for the scram discharge volume vent and drain valves being inoperable in April 1984, no action was initiated until May 20, 1985, to notify the Plant Manager of the problem. The plant took immediate action to add valves 1C11-F010 and 1C11-F011 to SOI 04-1-01-C11-1 and require their handwheels be locked in the closed position. This will be identified as violation (50-416/85-22-03).

- e. On July 2, 1985, the licensee requested the resident inspectors clarify the intent of IE Information Notice (IN) 85-44, Emergency Communication System Monthly Test. Attachment 1 to IN 85-44 stated the following matrix indicates the primary modes of operation for the NRC communication links which are to be tested monthly by the licensee.

<u>From</u>	<u>To</u>
Control Room	Headquarters
Technical Support Center (TSC)	ENS only
Emergency Operations Facility	ENS and HPN
	ENS and HPN

The licensee stated that the only HPN phone was in the TSC and was not operable, also, there was a question as to who, MP&L or the NRC, was responsible for maintaining the ENS and HPN phones. The ENS phone in the TSC has been inoperable for some time and the NRC was verbally notified. Following discussions with the regional emergency preparedness section chief, Mr. W. Cline, and Mr. V. Panciera, the inspector informed the licensee of the following:

- (1) The NRC is responsible for maintaining the operability of the ENS and HPN phones. At the present time, the HPN phones are not operational at Grand Gulf and this is an NRC responsibility.
- (2) The phones in the EOF and the TSC are not under constant scrutiny and are therefore subject to misuse and/or damage. The licensee has agreed to provide for the protection of the ENS and HPN phones.
- (3) At the time of the licensee's monthly tests of provisions for communicating with the NRC, any discrepancies in operability should be reported to the NRC duty officer at that time.
- (4) The license should document their monthly check of the emergency communication system.

It is noted that ENS and HPN phones are located in the resident inspector's office. The residents periodically verify the ENS phone is operable. The HPN phone is inoperable.

6. Maintenance Observation (62703)

During the report period, the inspector observed selected maintenance activities. The observations included a review of the work documents for adequacy, adherence to procedure, proper tagouts, adherence to Technical Specifications, radiological controls, observation of all or part of the actual work and/or retesting in progress, specified retest requirements, and adherence to the appropriate quality controls.

In the areas inspected, no violations or deviations were identified.

7. Surveillance Testing Observation (61726)

The inspector observed the performance of selected surveillances. The observation included a review of the procedure for technical adequacy, conformance to Technical Specifications, verification of test instrument calibration, observation of all or part of the actual surveillances, removal from service and return to service of the system or components affected, and review of the data for acceptability based upon the acceptance criteria. The inspector observed a monthly Containment Pressure (Containment Spray) Functional Test (Procedure 06-IC-1E 12-M-0005, Rev. 23) required by Technical Specification 4.3.8.1. When one of the as found data points were observed outside of the acceptance criteria specified in the procedure, the instrument technician suspected a problem with the Rosemount readout unit (measuring and test equipment used during the functional test). Another readout unit was obtained and the functional test was repeated with all results then falling inside the as found acceptance criteria. The inspector was informed that the potentially defective readout unit would be returned to the M&TE issue facility for evaluation per procedure. Approximately four hours later while following up on the readout unit problem, the inspector observed the unit on a desk in the instrument shop with no administrative controls to prevent inadvertent use of the equipment by unsuspecting personnel. Administrative Procedure 37-S-01-60, Calibration and Control of Measuring and Test Equipment, Section 6.6 requires that personnel who suspect a problem with test equipment immediately affix a "DO NOT USE" label (pre-printed adhesive backed labels) to the equipment in order to prevent inadvertent use. The licensee's investigation showed the readout unit was given to the supervisor for action and although the unit was laying on a desk, the supervisor was aware of the question of calibration of this particular readout unit. The licensee's personnel are aware that an instrument left unattended constitutes a loss of positive control of the unit. This appears to be an isolated event and no further action is considered necessary.

In the areas inspected, no violations or deviations were identified.

8. ESF System Walkdown (71710)

A complete walkdown was conducted on the accessible portions of the Suppression Pool Makeup System. The walkdown consisted of an inspection and verification, where possible, of the required system valve power available

and valve locking, where required; instrumentation valved in and functioning; electrical and instrumentation cabinets free from debris, loose materials, jumpers and evidence of rodents; and system free from other degrading conditions.

In the areas inspected, no violations or deviations were identified.

9. Reportable Occurrences (92700)

The below listed Licensee Event Reports (LERs) were reviewed to determine if the information provided met NRC reporting requirements. The determination included adequacy of event description and corrective action taken or planned, existence of potential generic problems and the relative safety significance of each event. Additional inplant reviews and discussions with plant personnel as appropriate were conducted for the reports indicated by an asterisk. The LERs were reviewed using the guidance of the general policy and procedure for NRC enforcement actions. The following LERs are closed.

<u>LER No.</u>	<u>Report Date</u>	<u>Event</u>
82-80	3-21-84	Division 2 Standby Diesel Generator Rear Crankcase Cover Capscrew Defective
82-88	10-23-82	Incomplete Surveillance Procedure
82-159	1-5-83	QA Audit Reveals No Shutdown Cooling Mode Loops Were In Operation During a Hot Shutdown
84-08	3-5-84	Loss of HPCS Pump Control Power
84-37	9-11-84	LCO Time Limit for Sampling Exceeded
84-38	9-14-84	Fuel Oil Sample Found Out of Technical Specification Limits
84-39	9-17-84	Isolation of RWCU System Containment Isolation Valve
*84-40	10-5-84	Reactor Scram
84-41	10-8-84	Plant Shutdown Due to Jet Pump Failing Surveillance

LER 84-40 is associated with reactor scram #7 which was reviewed and discussed in Inspection Report 50-416/84-37.

On June 24, 1985, the inspectors received notification of a 10 CFR Part 21, report regarding the misapplication of test switches, CR 2940, in the Standby Liquid Control System (SLCS) at Grand Gulf. General Electric (GE) SLCS drawings specified test switches (CR2940) which were not qualified for the harsh environment inside containment. Failure of the switches during a LOCA has been postulated to degrade the emergency power supply enough to inhibit operation of Emergency Core Cooling System (ECCS) equipment. Switch failure could start the valved out SLCS pump or valve motor leading to motor overheating and shorting of the emergency bus which is protected only by fault current protective devices. Both division 1 and 2 emergency power buses are affected. The licensee was contacted and was already aware of the 10 CFR 21 report. GE is preparing a design drawing change to correct the problem. This will be an Inspector Followup Item (50-416/85-22-04).

In the areas inspected, no violations or deviations were identified.

10. Operating Reactor Events (90712)

The inspectors reviewed activities associated with the below listed reactor scrams. This review included determination of cause, safety significance, performance of personnel and systems, and corrective action. The inspectors examined instrument recordings, computer printouts, operations journal entries, scram reports and had discussions with operations maintenance and engineering support personnel as appropriate.

Scram No. 26 occurred at 4:35 p.m. on June 24, 1985, with the reactor operating at approximately 75% power. At the time of the scram, electrical technicians were testing a feeder breaker (252-1201) to the 6.9 kv Balance of Plant (BOP) bus (12HE). The technicians performed a trip test of breaker 252-1201, which not only tripped 252-1201 but also tripped the other feeder breaker, 252-1208, de-energizing the entire 6.9 kv 12HE bus. The loss of power to 12HE caused the B circulating water pump to trip resulting in a low condenser vacuum trip of the main turbine. This main turbine trip caused the reactor to scram.

The licensee stated that the test instructions provided to the electrical technicians were inadequate in that they did not provide for protecting the other feeder breaker from tripping. The inspectors determined from a review of the event that Maintenance Procedure (MP) 01-S-07-02, "Test and Retest Control", was not followed in that the retest instructions were not documented as required by the MP. Technical Specification 6.8.1 requires written procedures to be established, implemented, and maintained. This failure to follow MP 01-S-07-02 resulted in inadequate retest instructions which caused a reactor scram and therefore will be identified as violation (50-416/85-22-05).

11. Followup on Previously Identified Items

(Closed) IFI 50-416/84-51-03, PSRC Review of Post Trip Analysis. The licensee established a temporary Plant Safety Review Committee (PSRC) Subcommittee to expedite review of backlogged incident reports and post trip analysis. The PSRC was presented with the results of the review and concurred with the subcommittee recommendations for closure of the incident reports. The subcommittee was dissolved on January 30, 1985.

The licensee revised Administrative Procedure No. 01-S-06-26, Post Trip Analysis, to include the PSRC secretary on the routing list for complete Post Trip Analysis reports in order to ensure timely PSRC reviews in the future. This item is closed.

12. In-Office Review

The following item was evaluated by the Radiation Safety and Safeguards regional staff. Based on this review and the results of the latest Resident and Region based inspection activities in the affected functional areas, the following item was determined to require no additional specific followup and is closed.

IFI (84-EP-01), Followup on availability of and adequacy of training.

13. Survey of Licensee's Response to Selected Safety Issues (92704)

Temporary Instruction 2515/67 requested the resident inspectors look at the licensee's evaluation of the Institute of Nuclear Power Operations (INPO) Significant Operating Experience Report (SOER) recommendations relating to mispositioning of control rods. The inspector reviewed the licensee's Nuclear Plant Engineering (NPE) department's summary report which responded to the INPO SEOR recommendations. This report and the inspector's review of plant procedures concluded that the plant staff's procedures and policies were adequate and did not require any changes to incorporate the recommendations of SOER 84-2.

There were two points of interest discussed with the licensee that were a result of this inspection. The first concerns the requirement for reactor engineering approval for control rod movement. The inspectors performed a partial review of the following procedures.

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|-----|-------------------|---|
| (a) | 05-1-02-I-1 | Reactor Scram |
| (b) | 06-OP-1C11-V-0001 | Control Rod Operability |
| (c) | 09-S-02-400 | Control Rod Sequence And Movement Control |
| (d) | 09-S-02-401 | Control Rod Pattern Exchange |
| (e) | 09-S-02-402 | Individual Control Rod Scram to Reduce Flange Leakage |

(f)	09-S-02-403	CRD Differential Pressure and Friction Testing
(g)	09-S-02-404	Individual Control Rod Stroke Time Testing
(h)	03-1-01-1	Cold Shutdown to Generator Carrying Minimum Load
(i)	03-1-01-2	Power Operation
(j)	03-1-01-3	Plant Shutdown
(k)	04-1-01-C11-2	Rod Control and Information System
(l)	04-1-01-C11-1	Control Rod Hydraulic System
(m)	06-OP-C11-V-0012	PPC Rod Block Functional
(n)	05-S-01-EP-10	Reactivity Controls
(o)	06-RE-SC11-V-402	Control Rod Scram Testing
(p)	05-1-02-IV-1	Off Normal Event Procedure Control Rod Drive Malfunctions

This review revealed some apparent inconsistencies in the requirement for reactor engineering approval especially since a recent policy change no longer requires the Shift Technical Advisor (STA) be a qualified reactor engineer and the reactor engineer is no longer required to remain on shift. This policy change and the present procedures, some of which use the STA and reactor engineer interchangeably, may lead to confusion among the operations staff as to the requirements for reactor engineering approval. The second point related to the review of Technical Section Procedures 09-S-02-402 and 09-S-02-404. The performance of both of these procedures requires the use of the Rod Pattern Controller (RPC) bypass switches which bypass the protective function of the RPC system. Neither of these procedures provide guidance on the operation of these bypass switches but both reference System Operating Instruction 04-1-01-C11-1 for the guidance. The inspector reviewed 04-1-01-C11-1 and did not find any information relating to control rod movement or the use of the RPC bypass switches. However, a review of 04-1-01-C11-2 which does provide the requirements associated with control rod movement and the use of the RPC bypass switches, indicated that this is the proper procedure to reference. This apparent typographical error was discussed with the licensee and is being corrected.

In the areas inspected, no violations or deviations were identified.