



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

Report No.: 50-416/86-30

Licensee: Mississippi Power and Light Company  
Jackson, MS 39205

Docket No.: 50-416

License No.: NPF-29

Facility Name: Grand Gulf

Inspection Conducted: September 15-19, 1986

Inspectors:	<u>J. L. Mathis</u>	<u>10/21/86</u>
	J. L. Mathis	Date Signed
	<u>P. T. Burnett</u>	<u>10-21-86</u>
	P. T. Burnett	Date Signed
Approved by:	<u>F. Jape</u>	<u>10-21-86</u>
	F. Jape, Section Chief, TBS	Date Signed
	Engineering Branch	
	Division of Reactor Safety	

SUMMARY

Scope: This routine, unannounced inspection was in the areas of refueling activities, spent fuel pool activity, followup to previously identified items and meeting on stability testing

Results: No violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*C. R. Hutchinson, General Manager
- \*J. E. Cross, Site Director
- \*R. F. Rogers, Unit 1 Project Manager
- \*L. L. Daughtery, Compliance Supervisor
- \*D. G. Cupstid, Technical Support Superintendent
- \*J. D. Bailey, Compliance Coordinator
- G. H. Lee, SRO Refueling
- Y. Balas, Reload Project Engineer
- M. Harrigill, Technical Support Engineer
- R. Kelley, Nuclear Plant Engineering
- J. Lee, Nuclear Fuels Engineer
- R. Patterson, Technical Support Nuclear Engineer

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

#### Other Organizations

- L. Nielson, Engineer -Exxon Nuclear Corporation
- H. Williamson, Engineer -Exxon Nuclear Corporation
- I. Nir, Nuclear Engineer - Middle South Services
- S-J. Penj, Nuclear Engineer - Middle South Services
- L. Phillips, Engineer - USNRC:RSB/DBL
- D. Fry, I&C Division - Oak Ridge National Laboratory

#### NRC Resident Inspectors

- R. C. Butcher, NRC Senior Resident Inspector
- W. F. Smith, NRC Resident Inspector

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on September 19, 1986, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

### 3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

### 4. Unresolved Items

Unresolved items were not identified during the inspection.

### 5. Refueling Activity (60705, 70710)

Grand Gulf Nuclear Station Unit 1 commenced its first refueling outage on September 6, 1986, at 12:01 a.m. During this first refueling outage at GGNS-1, MP&L will be replacing approximately 264 irradiated GE assemblies with Exxon Nuclear Company (ENC) SN-1.1 8x8 fuel assemblies. These ENC XN-1.1 8x8 fuel assemblies were designed and built by ENC for the GGNS cycle 2 reload core. Changes to GGNS Unit 1 Technical Specifications to support power in cycle 2 were submitted to the NRC on July 15, 1986. Approval of the proposed TS changes is expected around October 24, 1986.

#### a. Preparation for Refueling

The inspector reviewed the Unit 1, Integrated Operating Instruction (IOI) 03-1-01-5, Refueling which provided instructions for plant shutdown for IOI-3 to Mode 5 (Refuel). The inspector reviewed the following procedures to ascertain the licensee's preparation for refueling including, adequacy of procedures, and administrative controls for both refueling and maintenance activities performed during the outage:

AP	01-S-06-10 (Rev. 2), Control of Refueling Operations
SOI	04-1-01-F11-1 (Rev. 15), Refueling Platform
SOI	04-1-01-F11-2 (Rev. 14), Horizontal Fuel Transfer Mechanism
SP	06-OP-1C51-V-0001, SRM Channel Functional Test
SP	06-OP-1C71-V-0002, Refueling Interlock Check
IOI	03-1-01-5 (Rev.19), Refueling

The test procedures above were examined for embodiment of the necessary test prerequisites, preparation, acceptance criteria and sufficiency of technical content.

#### b. Refueling Activities

The inspector witnessed refueling activities from the control room, refueling platform and spent fuel pool areas to verify the following:

- (1) Core monitoring during refueling operations is in accordance with TS.
- (2) Vessel and spent fuel storage pool water levels are as required by TS.



- (3) Reactor mode switch position is as required by TS.
- (4) Operability of refueling interlocks.
- (5) Checks of decay heat removal system flowrate are being conducted as required by TS.
- (6) Staffing requirements were in accordance with TS.
- (7) Radiological controls were maintained in accordance with approved procedures.
- (8) Direct communication was established between the control room and reactor building.
- (9) Appropriate steps and QA hold points were signed off.

c. Spent Fuel Pool Activities

The inspector observed fuel handling operations during fuel movement in the spent fuel pool area and reviewed procedures related to fuel handling to verify that the following were included in the procedures:

- (1) A limitation on the number of fuel assemblies that can be out of safe geometry locations at the same time.
- (2) Provision for verifying prior to fuel handling that the spent fuel pool area crane interlocks or physical steps prevent the crane from passing over fuel storage locations.
- (3) Provision for verifying prior to fuel handling that the spent fuel pool ventilation system is operable.
- (4) Provision for verifying that minimum water level for the spent fuel pool is monitored during fuel handling operations.
- (5) Provision for verifying that the spent fuel pool storage area radiation and airborne radioactivity monitors are operable.
- (6) Provision for verifying that the spent fuel pool cleaning and cooling system are operable.

Fuel handling operations in the spent fuel pool were observed by the inspector. Spent fuel pool water level was equal to or higher than the level established by Technical Specification.

No violation or deviations were identified in the areas inspected.

## 6. Meeting on Stability Testing (92705)

A meeting was held among representatives of the licensee, Exxon Nuclear Corporation (ENC), Oak Ridge National Laboratory (ORNL), and the NRC (RSB/DBL and RII) to discuss forthcoming tests of reactor stability to be performed early in cycle 2. The tests will not require deliberate perturbation of the reactor. Instead, neutron noise analysis will be performed at steady-state conditions with the reactor operating in a power-flow region of predicted low stability. Much of the meeting addressed providing signals to allow ORNL to make direct, real-time measurements of stability, and hence perform an audit function for the NRC. Any data to be used in support of future changes in Technical Specifications will be obtained and analyzed by the licensee and ENC. A new Technical Specification to be implemented starting with cycle 2 will require additional surveillance when the reactor is operated in a power-flow region in which the predicted stability decay ratio is  $\geq 0.6$ . The goal of these tests is to better define that region. The inspector made arrangements to receive advance notification of the tests so they may be witnessed by Region II personnel.

## 7. Followup on previously identified items

(Closed) Inspection Followup Item (IFI) 416/84-29-01: Verify resolution of vibration displacement values for small bore piping prior to exceeding test condition 2. MP&L contracted Wyle Laboratories to provide trained personnel and equipment for data collection, reduction and analysis. The changes made in data collection, reduction and analysis for small bore piping vibrations fall within the description of special testing found in chapter 14 of FSAR. The changes made satisfies MP&L commitment for providing an alternate program for small bore pipe analysis prior to leaving test condition 2. Inspection Followup Item 416/84-29 01 is closed.

(Closed) IFI 416/85-11-01: Resolution of Data for level 1 Criteria in Startup Test 1-B33-SU-30-3 subsection 4.7, figure 4. MP&L submitted pump coastdown results to GE Engineering for evaluation of pump coastdown data and agrees that the result was adequate to proceed to 100 percent power. This item is closed.

(Open) Unresolved item 416/86-06-01: Define the allowable applications of the rod position bypass switches. The licensee has proposed changes to Technical Specifications 3.1.4.2 and 4.1.4.2 and the associated bases. This item will remain open until there is a final decision on the proposed changes.