



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

Report No.: 50-416/92-21

Licensee: Entergy Operations, Inc.
 Jackson, MS 39205

Docket No.: 50-416

License No.: NPF-29

Facility Name: Grand Gulf Nuclear Station

Inspection Conducted: August 1 - August 22, 1992

Inspectors: <u>FUB R.W. Wright</u>	9/24/92
J. L. Mathis, Sr. Resident Inspector	Date Signed
<u>FUB R.W. Wright</u>	9/24/92
R. H. Bernhard, Sr. Resident Inspector	Date Signed
<u>FUB R.W. Wright</u>	9/24/92
C. A. Hughey, Resident Inspector	Date Signed

Accompanying Personnel: F.X. Talbot, Reactor Engineer (Int'l)

Approved by: <u>F. S. Cantrell</u>	9/24/92
F. S. Cantrell, Chief	Date Signed
Reactor Project Section 1B	
Division of Reactor Projects	

SUMMARY

Scope:

The resident inspectors conducted a routine inspection in the following areas: operational safety verification; surveillance observation; engineering safety features (ESF) system walkdown; action on previous inspection findings; and reportable occurrences. The inspectors conducted backshift inspections on August 3, 10, 12, 18, 20 and 21, 1992.

Results:

During the inspection period no violations or deviations were identified. The licensee met the safety objectives in the areas of operational safety verification, and surveillance activities.

An Operational Safety Assessment Review Team directed by the International Atomic Energy Agency was on site from August 3 - 20, 1992, to review and exchange information with plant personnel in all major plant functional areas. The results of this inspection are scheduled to be published by the IAEA.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- W. Cottle, Vice President, Nuclear Operations
- M. Dietrich, Manager, Training
- *J. Dimmette, Manager, Performance and System Engineering
- *C. Dugger, Manager, Plant Operations
- *C. Ellsaesser, Assistant Operations Manager
- *C. Hicks, Operations Superintendent
- C. Hutchinson, General Manager, Plant Operations
- *F. Mangan, Director, Plant Projects and Support
- M. Meisner, Director, Nuclear Safety and Regulatory Affairs
- D. Pace, Director, Nuclear Plant Engineering
- *J. Roberts, Manager, Plant Maintenance
- *R. Patterson, Assistant to General Plant Manager
- *R. Ruffin, Plant Licensing Specialist
- *J. Reaves, Assistant Director, Quality Programs

Dr. Thomas E. Murley, Director, Office of Nuclear Reactor Regulation; Mr. Stewart B. Ebner, Regional Administrator, Region II; Mr. Brian K. Grimes, Director, Division of Reactor Inspection and Safeguards (NRR); and Mr. David M. Verrelli, Chief, Branch 1, DRP, Region II were on site August 3, 1992, to meet with the resident inspectors, tour the facility, meet with plant management and attend the OSART entrance activities.

Mr. Floyd S. Cantrell, Chief, Section 1B, DRP, Region II was on site to meet with the resident inspectors and tour the facility on August 14-16, 1992.

Mr. James G. Partlow, Associate Director for Projects (NRR), and Mr. Luis A. Reyes, Assistant Regional Administrator, Region II, were on site August 20, 1992, to meet with the resident inspectors, tour the facility, meet with plant management, and attend the OSART exit activities.

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

*Attended exit interview

Acronyms and initialisms used throughout this report are listed in the last paragraph.

2. Plant Status

The reactor scrammed on August 4, 1992, due to a spurious primary water tank low level signal, and returned to power August 7, 1992. Power was reduced to 80 percent on August 10 and 13 1992 due to poor weather conditions. The balance of the inspection period, the plant operated at approximately 100 percent.

An Operational Safety Assessment Review Team (OSART) was on the site from August 3-20, 1992, to review and exchange information with plant personnel in all major plant functional areas. This team was directed by the International Atomic Energy (IAEA) in cooperation with the Nuclear Regulatory Commission, and consisted of nuclear power plant experts from a variety of foreign countries with varying technical backgrounds. The results of this inspection are scheduled to be published by the IAEA and distributed as appropriate through the NRC.

3. Operational Safety (71707 and 93702)

Daily discussions were held with plant management and various members of the plant operating staff. The inspectors made frequent visits to the control room to review the status of equipment, alarms, effective LCOs, temporary alteration, instrument readings, and staffing. Discussions were held as appropriate to understand the significance of conditions observed.

Plant tours were routinely conducted and included portions of the control building, turbine building, auxiliary building, radwaste building and outside areas. These observations included safety related tagout verifications, shift turnovers, sampling programs, housekeeping and general plant conditions. No deficiencies were identified.

On a weekly basis, selected ESF systems were confirmed operable by verify that accessible valve flow path alignments were correct, power supply breaker and fuse status were correct and instrumentation was operational. The following systems were confirmed operable using Probabilistic Risk Assessment Based System Inspection Plans:

- a. High Pressure Core Spray
- b. MSIV Leakage Control System
- c. Residual Heat Removal B

The inspectors reviewed the activities associated with the events listed below:

On August 4, 1992, at approximately 1526 hours, a reactor scram occurred when the turbine generator tripped due to a spurious primary water (PW) tank low level turbine trip signal. Turbine stop valve (TSV) and turbine control valve (TCV) fast closure automatically tripped the reactor and initiated a EOC-PPT transfer of the recirculation pumps to the LFMG. Reactor pressure increase caused 2 SRVs to open. Reactor water level control was established and a normal scram recovery was initiated to stabilize the plant.

The spurious PW tank low level signal occurred while an SRO trainee was performing a ground check by manipulating a ground transfer switch on the 24 VDC bus 110H load center. Licensee trouble shooting activities revealed that manipulation of the transfer switch affected the power supply to the pre-amp of the main generator electro-governor protection

(EGP) cabinet causing a spurious PW low level trip. Actual PW tank level following the event was verified to be above the set point at 94% which verified generation of a spurious signal.

Licensee initial corrective actions to prevent re-occurrence of this event was to complete temporary alteration 920035 to bypass the PW tank low level trip function and initiate MNCR 92-239 to investigate power supply surges to the EGP cabinet. Bypass of the trip function will remain in effect until the MNCR is resolved. The licensee also completed standing order 92-0042 which instructs operations to dispatch an operator to the turbine building to verify PW local tank level indication if a low tank level annunciator alarm is received in the control room. If level is below 78%, the operators are instructed to manually trip the turbine. Redundant generator alarm and trip functions also exist for low rotor and stator flow and high bushing terminal box level. The root cause of this event is still under investigation by the licensee and will be followed up by the Resident Inspectors as IFI 92-21-01.

An interview was conducted with the system engineer for refueling equipment to determine how the site uses the fuel bridge auxiliary hoist mechanical stop. Vendor manuals GEK-75577 and GEK-75573, for the fuel handling platform and the refueling platform respectively, contain information on the function of the various limit switches for the auxiliary hoist in their Table 4-6. The mechanical stop is considered to be the backup for the geared limit switch for the maximum-up stop position. This backup function prevents the hoist from reeling in cable to the point where the jam stop encounters a physical restriction to movement at the reel, potentially overloading the cable if the torque switch fails to operate properly, breaking the cable, and resulting in dropping the load. The function of the maximum-up and maximum-down limits are not personnel protection from overexposure, but are equipment protection limits. Personnel overexposure limits are enforced by redundant limit switches set at the normal-up stop position. The existing plant configuration is as described in the plant FSAR.

No violations or deviations were identified.

4. Surveillance Observation (61726)

The inspectors observed the performance of portions of the surveillances listed below. The observations included a review of the procedures for technical adequacy, conformance to technical specifications and LCOs; verification of test instrument calibration; observation of all or part of the actual surveillance; removal and return to service of the system or component; and review of the data for acceptability based upon the acceptance criteria.

06-OP-1D17-M-0003 Standby Service Water System Radiation Monitor Functional Test.

05-OP-1E21-Q-0006 LPCS Quarterly Functional Test

06-IC-1C71-M-1003 Turbine Control Valve Fast Closure (RPS/EOCRPT) Functional Test

06-IC-1B21-M-1007 Reactor Vessel Water Level Functional Test (ECCS)

No violations or deviations were identified. The surveillance tests were performed in a satisfactory manner and met the requirements of Technical Specifications.

5. (Closed) IFI 91-02-03, SER training item may not have been addressed in procedure generation package.

An in-office review by regional personnel has determined that adequate programmatic controls had been implemented to insure that training was conducted on the Emergency Operating Procedures. The SER training issues identified were corrected. This item is considered closed.

6. Exit Interview (30703)

The inspection scope and findings were summarized on, August 28, 1992, 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:

<u>Item Number</u>	<u>Description and Reference</u>
IFI 92-21-01	Follow up on root cause of primary water tank low level trip

7. Acronyms and Initialisms

ECCS	-	Emergency Core Cooling System
EGP	-	Electro Governor Protection
ESF	-	Engineering Safety Feature
EOC	-	End of Cycle
IFI	-	Inspector Followup Item
LCO	-	Limiting Condition for Operation
LFMG	-	Low Frequency Motor Generator
LPCS	-	Low Pressure Core Spray
MNCR	-	Material Nonconformance Report
MSIV	-	Main Steam Isolation Valve
MWO	-	Maintenance Work Order
NRC	-	Nuclear Regulatory Commission
PW	-	Primary Water
RPS	-	Reactor Protection System
RPT	-	Recirculation Pump Trip
SRO	-	Senior Reactor Operator
SRV	-	Safety Relief Valve
TCV	-	Turbine Control Valve
TSV	-	Turbine Stop Valve