



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W., SUITE 2900  
 ATLANTA, GEORGIA 30323-0199

Report No.: 50-416/94-04

Licensee: Entergy Operations, Inc.  
 Jackson, MS 39205

Docket No.: 50-416

License No.: NPF-29

Facility Name: Grand Gulf Nuclear Station

Inspection Conducted: January 1, 1994 through January 31, 1994

Inspectors: *[Signature]* 2/18/94  
 R. H. Bernhard, Senior Resident Inspector Date Signed

*[Signature]* 2/18/94  
 C. A. Hughey, Resident Inspector Date Signed

Approved by: *[Signature]* 2/18/94  
 F. S. Cantrell, Chief Date Signed  
 Reactor Projects Section 1B  
 Division of Reactor Projects

SUMMARY

Scope:

The resident inspectors conducted a routine inspection in the following areas: operational safety verification; maintenance observation; surveillance observation; and actions on previous inspection findings. The inspectors conducted backshift inspections on January 1 and 10, 1994.

Results:

Noncited violations were identified for failure by an operator to verify leak detection system bypass switch positions and failure to complete required operator rounds on time (Paragraph 3.b).

A Quality Programs audit of the vendor manual control process demonstrates the continued aggressive and indepth quality of audits conducted by the Quality Programs group. A noncited violation was identified for inadequate vendor manual control discovered during the audit (Paragraph 3.b).

Inspections in the area of maintenance and surveillance activities did not identify any areas of concern (Paragraphs 4 and 5). Plant improvements made during the last refueling outage prevented an unnecessary plant shutdown from high drywell temperatures when the drywell chillers experienced an evaporator failure (Paragraph 3.e).

A visit to local Public Document Room did not identify any areas of concern (Paragraph 7).

9403150200 940218  
 PDR ADDCK 05000416  
 G PDR

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*L. Daughtery, Superintendent, Plant Licensing
- W. Deck, Security Superintendent
- \*M. Dietrich, Manager, Training
- J. Dimmette, Manager, Performance and System Engineering
- \*C. Dugger, Manager, Plant Operations
- \*C. Ellsaesser, Technical Coordinator
- C. Hayes, Director, Quality Assurance
- \*C. Hicks, Operations Superintendent
- C. Hutchinson, Vice President, Nuclear Operations
- L. Dale, 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. Ruffin, Plant Licensing Specialist

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 merger of Entergy and Gulf States Utilities was completed and was effective December 31, 1994.

The plant operated in Mode 1, power operations, during the entire inspection period. At the end of the period, the unit had been on-line for 58 consecutive days. Power was reduced to 78% on January 14, 1994, to repair a steam leak on the high pressure turbine 5th stage extraction line. Power was reduced to 80% on January 27, 1994, due to severe weather conditions.

The new 10 CFR part 20 was implemented at the site on January 1, 1994.

Mr. J. P. Jaudon, Deputy Director, Division of Reactor Safety, Region II, was on site January 25 to meet with the licensee and the inspectors, and to tour the facility.

Dr. W. D. Beckner, Director, Project Directorate IV-1, NRR, was on site January 12 to meet with licensee and the inspectors, and to tour the facility.

## 3. Operational Safety (71707 and 93702)

- a. 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 alterations, 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. Additionally, the inspectors observed the status of fire protection equipment, the control of activities in progress, the problem identification systems, and the readiness of the onsite emergency response facilities. No deficiencies were identified. The inspectors observed noticeable improvements in general housekeeping since the end of the last inspection period.

- b. Surveillance procedure 06-OP-1000-D-0001, Daily Rounds, Rev. 42, Attachment I, requires that the Division II Leak Detection System switches be verified to be placed back to "normal" prior to placing the Division I LDS switches in "bypass" and requires verification of performance. Procedure criteria also allow only one division to be placed in bypass at a time.

On January 22, 1994, at 8:23 p.m., a licensed operator failed to return the Division II leak detection system switches back to the "normal" position from the "bypass" position prior to placing the Division I switches from the "normal" position to the "bypass" position. This resulted in both divisions of the LDS being inoperable. An annunciator "LDS Logic B Bypass" was immediately received in the control room and the Division II switches were returned to the "normal" position. Both trains were bypassed for about two minutes. Entry into TS Action Statement 3.3.2.c. was required (the action required would be to place at least one trip system in the trip condition within one hour). The operator involved was counseled and a Quality Deficiency Report was initiated by the licensee to determine the root cause and to recommend corrective actions to preclude recurrence. This licensee identified violation is not being cited because the criteria specified in Section VII.B of the NRC Enforcement Policy were satisfied and the low safety significance of the event. This item is identified as NCV 50-416/94-04-01, Failure to verify LDS bypass switch position.

- c. On January 27, 1994, Surveillance procedure 06-OP-1000-D-0001, Daily Operating Logs, Rev. 34, was not started as required by operations personnel by the required time. This resulted in numerous TS required surveillances not being completed on time.

TS surveillances required every 4 hours and 12 hours should have been started by 8:00 a.m. The TS surveillances required every 12 hours were started late at 11:00 a.m. Upon discovery, actions were taken to satisfactorily complete the rounds at 12:50 p.m. The plant remained in a stable condition during the entire period. At the time the plant was at 80% power due to a lightning storm in the area. The initial cause of the event was determined by the licensee to be miscommunications between shift personnel. Four ROs were on shift, one had to leave the control room to address an administrative matter. Poor communication during the turnover of responsibilities left the ROs in the control room with the misunderstanding that the TS rounds were complete when in fact only the control room rounds had been performed. The operators involved were counseled. A Quality Deficiency Report and a root cause evaluation were initiated by the licensee to determine the cause of the deficiency and to recommend corrective actions to preclude recurrence. In addition, night orders were issued the same day by the operations superintendent emphasizing that when shift briefings are conducted plant supervisors should explicitly state who is responsible for TS and other required rounds. This licensee identified violation is not being cited because the criteria specified in Section VII.B of the NRC Enforcement Policy were satisfied. This item is identified as NCV 50-416/94-04-02, Failure to complete operator TS rounds.

- d. A Quality Programs audit of the document control process conducted this inspection period (QSA 94/0003) identified several deficiencies with the control and updating of vendor manuals per Administrative Procedure 01-S-05-4, Control of Vendor/Technical Manuals, Rev. 12. Some examples included revisions to manuals not being properly completed and documented, discrepancies between several copies of the same manual, the use of "white out" on revision sheets and the use of deleted manuals. A Quality Deficiency Report was issued on January 25. A letter was issued on January 26 by the acting plant general manager to all site employees requiring all permanent-issue vendor manuals be returned to the Document Control group, and that only vendor manuals that have been verified against the master copy be used. This failure to maintain vendor and technical manuals in accordance with 01-S-05-04 is not being cited because the criteria specified in Section VII.B of the NRC Enforcement Policy were satisfied. This item is identified as NCV 50-416/94-04-03, Inadequate vendor manual control.

The inspectors discussed the audit plan with QP auditors prior to and during the audit. The plan was indepth and thorough. The auditors were knowledgeable of the area being reviewed. The identification of the problems by the auditors demonstrates the continued aggressive and indepth quality of audits and is identified as a strength of the Quality Programs group.

- e. At approximately 5 a.m. on January 2, 1994, an evaporator tube in a non-safety related Drywell Cooling System ruptured, causing the associated chilled water system to trip on low pump suction pressure. Approximately thirty minutes passed while the drywell cooling system was returned to operation using the alternate compressor. Drywell temperature increased from 107° to 130°F. The technical specification limit for drywell temperature is 135°F. which would require the initiation of an eight hour shutdown action. Engineered plant improvements were made during RF06 that included replacement of coils in selected drywell coolers. Without the changes, the plant would have faced a shutdown as a result of this event. This is an example of plant improvements made that resulted in avoidance of an unnecessary plant shutdowns. The inspectors monitored corrective actions taken in response to this event. At the end of the inspection period, final repairs were pending, awaiting refurbishment of the evaporator.

Three non-cited violations were identified.

4. Maintenance Observation (62703)

During the report period, the inspectors observed portions of the maintenance activities listed below. The observations included a review of the MWOs and other related documents for adequacy; adherence to procedure, proper tagouts, technical specifications, quality controls, and radiological controls; observation of work and/or retesting; and specified retest requirements.

<u>MWO</u>	<u>DESCRIPTION</u>
114363	Drywell Chiller B001A troubleshooting
114102	Calibrate Diesel Generator B Starting air storage tank C low pressure switch

No violations or deviations were identified. The results of the observations in this area indicated that maintenance activities were effective.

5. 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-1C11-W-0001, Rev. 30	Control Rod Operability
06-IC-1D17-A-1027, Rev. 29	Eberline (SPING) Radiation Monitor Calibration (FHA vent)

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

6. Action on Previous Inspection Findings (92701 and 92702)

- a. (Closed) Inspector Followup Item (IFI) 50-416/92-16-03 and LER 92-10-01, Plant susceptibility to lightning induced scrams.

Actions implemented in an effort to reduce the plants susceptibility to lightning induced scrams included modifications and enhancements to reduce grounding problems and electrical noise intrusion into the APRM system using ferrite beads to suppress noise, time delays, and an expanded lightning dissipation system along with operator actions.

The inspectors concluded that actions taken by the licensee have been effective in significantly reducing the plant susceptibility to lightning induced scrams. The last lightning related scram occurred on June 6, 1992, and since then at least two direct hits have been recorded on site, neither of which resulted in a scram.

- b. (Closed) IFI 50-416/93-03-02, Standby Service Water Basin U-bolt failures.

During February 1993, the licensee found that a large portion of the brass U-bolts that provide restraint to the standby service water cooling tower drift eliminators were broken. A root cause evaluation revealed the cause to be stress corrosion cracking and dezincification.

During the last outage (RF06) all the U-bolts in the Division I, II and III towers were replaced with galvanized steel bolts and an all steel assembly. Although no failures were identified in the unused (Unit 2) portions of the towers, all drift eliminators, U-bolts and I-beams were removed to eliminate any loose items concern.

- c. (Closed) Unresolved Item 50-416/92-16-04, Standby Gas Treatment Bypass Leakage, and LER 92-012.

On June 8, 1992, the licensee informed the NRC of unfiltered bypass leakage around the motor-to-shaft and vane actuator shafts on both A and B standby gas treatment trains. This in-leakage initially was not quantified and was considered to have the potential for exceeding 10 CFR Part 100 offsite dose limits during an accident. The licensee stated that this leakage had been

repaired and retested. On June 10, 1993, the licensee determined that the leakage repair had not been completed even though the work package had been signed off as being completed. Region II was formally notified of the incomplete work by a letter dated June 12, 1993. An unresolved item was opened pending the completion of root cause investigations into the improper signing of the work package, the safety significance of the inleakage, and an independent review of the design change process by Entergy corporate personnel.

The inspectors reviewed Quality Deficiency Report 149-92, which was initiated to determine why incomplete work packages had been signed off as being completed. The persons involved in the incident, including their supervisor, were restricted from all work activities on plant equipment until the issue was resolved. A review of all work performed during RF05 by craft sheet metal workers determined that all other work assigned to them had been properly completed. Walkdowns of the other work were performed to insure that no programmatic deficiencies existed. Seminars were conducted by the head of the Plant Modification and Construction group to discuss the event. Other training sessions were held by work supervisors to stress the importance of following written instructions, verbatim compliance, and turnovers. The inspectors reviewed PM&C Management Standard which was developed to establish guidelines for ensuring management meets expectations for work control.

The inspectors reviewed Engineering Report GGNS-92-0031. The report concluded that design/licensing basis assumptions used when calculating offsite and control room doses during an accident with the unfiltered bypass leakage could have resulted in exposures exceeding 10 CFR Part 100 limits. However, when actual measured containment leakage rates, measured control room leakage, suppression pool scrubbing and more recent ICRP 30 iodine dose conversion factors were used to calculate dose, all thyroid (and whole body) doses were well within 10 CFR Part 100 limits.

The inspectors reviewed the results of the licensee's independent evaluation which found multiple process problems, lack of process ownership, lack of process understanding and lack of teamwork. As a result of this evaluation, changes were made to improve the design change process.

Based on the inspectors' review of the licensee's evaluations and corrective actions, based on no limits being exceeded, and discussion of the results with cognizant licensee personnel, these items are closed.

- d. (Closed) Violations 50-416/93-04-01, Failure to follow procedures during control rod movements, and 50-416/93-11-01, Failure to perform proper control rod movement during scram time testing.

On March 20 and July 11, 1993, reactor operators performed improper control rod movements during control rod scram time testing. The inspectors have discussed these events with on-shift SROs and ROs to ensure that operations personnel were made aware of these events and their possible consequences. In addition, the inspectors verified that the corrective actions discussed in the licensee's responses to the NOV's dated June, 4, 1993, and September 8, 1993, have been implemented. Based on these interviews and observation of recent control rod movements using revised procedures, these items are closed.

#### 7. Public Document Room

On January 13, 1994, the inspectors visited the Public Document Room for Grand Gulf Nuclear Station maintained in Natchez, Mississippi. The inspector found the documents to be well maintained, and the library staff interviewed knowledgeable in the procedures required for posting the updates to the documents. The equipment required for reading the microfiche was operable, and accessible.

#### 8. Exit Interview

The inspection scope and findings were summarized on February, 4, 1994, with those persons indicated in paragraph 1 above. The inspectors described the areas inspected and discussed in detail the inspection results listed below. Dissenting comments were not received from the licensee. Proprietary information is not contained in this report.

<u>Item No.</u>	<u>Type</u>	<u>Description</u>
50-416/94-04-01	NCV	Failure to verify LDS bypass switch position
50-416/94-04-02	NCV	Failure to complete operator TS rounds
50-416/94-04-03	NCV	Inadequate vendor manual control

#### 8. Acronyms and Initialisms

APRM	-	Average Power Range Monitors
BWR	-	Boiling Water Reactor
CFR	-	Code of Federal Regulations
DCP	-	Design Change Package
ICRP	-	International Counsel on Radiation Protection
IFI	-	Inspector Followup Item
LCO	-	Limiting Condition for Operation
LDS	-	Leak Detection System
LER	-	Licensee Event Report
LPRM	-	Local Power Range Monitor
MCP	-	Minor Change Package
MWO	-	Maintenance Work Order



NCV	-	Noncited Violation
NRC	-	Nuclear Regulatory Commission
NRR	-	Office of Nuclear Reactor Regulation
PM&C	-	Plant Modifications and Construction
RCIC	-	Reactor Core Isolation Cooling
RF	-	Refueling Outage
RO	-	Reactor Operator
QP	-	Quality Program
SBGT	-	Standby Gas Treatment System
SRO	-	Senior Reactor Operator
TS	-	Technical Specifications