



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064**

April 18, 2000

William A. Eaton, Vice President
Operations - Grand Gulf Nuclear Station
Entergy Operations, Inc.
P.O. Box 756
Port Gibson, Mississippi 39150

SUBJECT: NRC INSPECTION REPORT NO. 50-416/00-03

Dear Mr. Eaton:

This refers to the inspection conducted on February 20 through April 1, 2000, at the Grand Gulf Nuclear Station facility.

During the 6-week period covered by this inspection, your conduct of activities at the Grand Gulf facility was generally characterized by safety-conscious operations, sound engineering and maintenance practices, and careful radiological work controls.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The violation is being treated as a noncited violation (NCV), consistent with Section VII.B.1.a of the Enforcement Policy. The NCV is described in the subject inspection report. If you contest the violation or severity level of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Grand Gulf Nuclear Station facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, if requested, will be placed in the NRC Public Document Room (PDR).

Entergy Operations, Inc.

-2-

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Joseph I. Tapia
Project Branch A
Division of Reactor Projects

Docket No.: 50-416
License No.: NPF-29

Enclosure:
NRC Inspection Report No.
50-416/00-03

cc w/enclosure:
Executive Vice President
and Chief Operating Officer
Entergy Operations, Inc.
P.O. Box 31995
Jackson, Mississippi 39286-1995

Wise, Carter, Child & Caraway
P.O. Box 651
Jackson, Mississippi 39205

Winston & Strawn
1400 L Street, N.W. - 12th Floor
Washington, DC 20005-3502

Sam Mabry, Director
Division of Solid Waste Management
Mississippi Department of Natural
Resources
P.O. Box 10385
Jackson, Mississippi 39209

President, District 1
Claiborne County Board of Supervisors
P.O. Box 339
Port Gibson, Mississippi 39150

General Manager
Grand Gulf Nuclear Station
Entergy Operations, Inc.
P.O. Box 756
Port Gibson, Mississippi 39150

The Honorable Richard Ieyoub
Attorney General
Department of Justice
State of Louisiana
P.O. Box 94005
Baton Rouge, Louisiana 70804-9005

Office of the Governor
State of Mississippi
Jackson, Mississippi 39201

Mike Moore, Attorney General
Frank Spencer, Asst. Attorney General
State of Mississippi
P.O. Box 22947
Jackson, Mississippi 39225

Dr. F. E. Thompson, Jr.
State Health Officer
State Board of Health
P.O. Box 1700
Jackson, Mississippi 39205

Robert W. Goff, Program Director
Division of Radiological Health
Mississippi Dept. of Health
P.O. Box 1700
Jackson, Mississippi 39215-1700

Vice President
Operations Support
Entergy Operations, Inc.
P.O. Box 31995
Jackson, Mississippi 39286-1995

Director, Nuclear Safety
and Regulatory Affairs
Entergy Operations, Inc.
P.O. Box 756
Port Gibson, Mississippi 39150

Entergy Operations, Inc.

-4-

Vice President, Operations
Grand Gulf Nuclear Station
Entergy Operations, Inc.
P.O. Box 756
Port Gibson, Mississippi 39150

bcc to DCD (IE01)

bcc electronic distribution from ADAMS by RIV:

- Regional Administrator (**EWM**)
- DRP Director (**KEB**)
- DRS Director (**ATH**)
- Senior Resident Inspector (**JLD**)
- Branch Chief, DRP/A (**JIT**)
- Senior Project Engineer, DRP/A (**DNG**)
- Branch Chief, DRP/TSS (**LAY**)
- RITS Coordinator (**NBH**)

Only inspection reports to the following:

- D. Lange (**DJL**)
- NRR Event Tracking System (**IPAS**)
- Document Control Desk (**DOCDESK**)
- GG Site Secretary (**MJS**)
- Wayne Scott (**WES**)

bcc hard copy:
RIV File Room

DOCUMENT NAME: R:_GG\GG2000-03RP-JLD.wpd

To receive copy of document, indicate in box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

RIV:SRI	RI	C:DRS/PS	D:ACES	C:DRP/A
JLDixon-Herrity	PJAlter	GMGood	GFSanborn	JITapia
4/18/00 (E-JIT)	4/18/00 (E-JIT)	4/18/00 /RA/	4/18/00 /RA/	4/18/00 /RA/

OFFICIAL RECORD COPY

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 50-416
License No.: NPF-29
Report No.: 50-416/00-03
Licensee: Entergy Operations, Inc.
Facility: Grand Gulf Nuclear Station
Location: Waterloo Road
Port Gibson, Mississippi 39150
Dates: February 20 through April 1, 2000
Inspectors: Jennifer Dixon-Herrity, Senior Resident Inspector
Peter Alter, Resident Inspector
William A. Maier, Senior Emergency Preparedness Inspector
Approved By: Joseph I. Tapia, Chief, Project Branch A

ATTACHMENT: Supplemental Information

EXECUTIVE SUMMARY

Grand Gulf Nuclear Station NRC Inspection Report 50-416/00-03

This inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a 6-week period of resident inspection.

Operations

- The plant was maintained in good condition (Section O2.1).

Maintenance

- The eight maintenance and surveillance testing activities observed were well conducted (Section M1.1).

Engineering

- The licensee's response to a turbine first stage pressure sensing line failure was in accordance with the procedures and exhibited a good questioning attitude (Section E1.1).

Plant Support

- Changes made in Revision 39 to the emergency plan were in accordance with NRC requirements (Section P3.1).
- An emergency action level change involving a security threat general emergency decreased the emergency plan's effectiveness; therefore, it was a violation of 10 CFR 50.54(q). This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as CR-GGN-1999-1936 (Section P3.1).

Report Details

Summary of Plant Status

The plant operated at 100 percent power throughout the inspection period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

The inspectors performed control room observations to assess operator knowledge and performance. Shift turnovers and shift briefs were thorough and well conducted. Operators were knowledgeable of the status of equipment, and applicable Technical Specification limiting conditions for operations were appropriately entered. The inspectors observed operators lower power to address the transformer concerns identified on January 24, 2000. The evolution was well controlled.

O2 Operational Status of Facilities and Equipment

O2.1 Plant Tours

a Inspection Scope (71707)

The inspectors conducted tours through safety-related portions of the plant.

b. Observations and Findings

The areas of the plant that were toured were maintained in good condition. While touring the reactor core isolation cooling room on March 2, 2000, the inspectors observed that Valve 1E51FX075 had a packing leak. The deficiency was not documented in the work control program. The inspectors discussed the packing leak with the shift superintendent. Licensee personnel found that the leak was intermittent and could only be repaired while that portion of the turbine drain's system was operating. Maintenance Action Item 275534 was initiated to repair the valve.

c. Conclusions

The plant was maintained in good condition.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Maintenance and Surveillance Observations

a. Inspection Scope (61726, 62707)

The inspectors observed all or portions of the maintenance, surveillance, and test activities listed below. Maintenance work was reviewed to ensure that adequate work instructions were provided, that the work performed was within the scope of authorized work, and that the work performed was adequately documented. For surveillances, the test procedures were reviewed and compared to the Technical Specification surveillance requirements and bases to ensure that the procedures satisfied the requirements. In all cases, the impact to equipment operability and applicability of Technical Specification actions were independently verified. The following are the maintenance action items and surveillance tasks observed:

Maintenance:

- 275029 Main steam Line C valve position indication problem
- 272176 Clean and lubricate Division II standby diesel generator jacket water pump
- 275680 Standby liquid control Train A postmaintenance test run
- 264104 Control rod drive Pump B replacement
- 276151 Control room air conditioning Unit A repair

Surveillance:

- 06-ME-1T48-R-0008 In-place Testing of Standby Gas Treatment Filtration System
- 06-EL-1R21-M-0001 4.16 KV Degraded Voltage Functional Test and Calibration
- 06-IC-1C51-SA-0001 Average Power Range Monitor Calibration

b. Observations and Findings

The inspectors observed that the work performed during these activities was well conducted. In reviewing the Technical Specification surveillance requirements documented in the licensee's tracking program, the inspectors observed that Technical Specification Surveillance 3.3.8.1.2, calibration of the degraded voltage time delay for Divisions 1 and 2, as required by Function 3.3.8.1-1.1.d, was not documented in the tracking program. In addition, Procedure 06-OP-1P75-R-0003(4), "Standby Diesel Generator 11(12): 18 Month Functional Test," Revision 105, did not address the surveillance requirement. The inspectors noted that the surveillance requirement was met through the logic system functional test as long as the time delay acceptance

criteria was met. As a result, the licensee was meeting the surveillance requirement. There had been no problems identified in this area during recent functional tests. The operations staff initiated Condition Report CR-GGN-2000-0491 to resolve the discrepancy.

c. Conclusions

The eight maintenance and surveillance testing activities observed were well conducted.

III. Engineering

E1 Conduct of Engineering

E1.1 Turbine First Stage Pressure Input Into Reactor Protection System

a. Inspection Scope (37551)

The inspectors reviewed the licensing design basis for the turbine first stage pressure bypass of turbine stop valve closure and turbine control valve fast closure scrams below 40 percent rated thermal power. The inspectors reviewed NUREG-0831, "Safety Evaluation Report related to the operation of Grand Gulf Nuclear Station Units 1 and 2," September 1981, the Preliminary Safety Analysis Report and the Updated Final Safety Analysis Report (UFSAR). The inspectors also discussed the issue with the licensee's engineering and licensing staffs.

b. Observations and Findings

On December 12, 1999, while the plant was operating at 50 percent power, one of two turbine first stage pressure instrument sensing lines failed, depressurizing Transmitters PT-N052A and -C. This caused the pressure transmitters to sense a thermal power less than 40 percent and bypass the turbine stop valve closure and turbine control valve fast closure scram inputs to reactor protection system Channel A. This would have prevented a full scram on turbine stop valve closure or turbine control valve fast closure. Operators responded to annunciators in the main control room, entered the 4-hour action statement for Technical Specification 3.3.1.1.E, and reduced reactor power to below 40 percent.

The licensee initiated Condition Report CR-GGN-1999-1961 to repair the failed sensing line and CR-GGN-2000-0135 to evaluate the tubing failure mechanism. During this review, engineers observed a potential discrepancy with UFSAR Section 7.2.1.1.4.4.2 which stated "The transmitters are arranged so that no single failure can prevent a turbine stop valve closure scram or turbine control valve fast closure scram." Engineers initiated Condition Report CR-GGN-2000-0177 to address why the single failure of a turbine first stage pressure instrument sensing line had allowed bypassing both the turbine stop valve closure and turbine control valve fast closure scrams. Although the licensee's evaluation was still in progress, engineers reviewed IEEE Standard 379-1972,

“Trial Use Guide for the Application of Single Failure Criterion to Nuclear Power Generating Station Protective Systems,” and determined that Grand Gulf’s license did not require instrument sensing lines to meet single failure criterion. In addition, the 10 CFR Part 50, Appendix A, definition of single failure states that the conditions under which a single failure of a passive component in a fluid system should be considered in designing a system are under development.

The inspectors observed that UFSAR Figure 7.2-1c showed separate sensing lines for each of the four transmitters. However, the as-built instrument tubing run Drawings FSK-I-1051A-010-A through -028-A and P&ID M-1051A, “Main & Reheat Steam System,” Revision 9, showed one sensing line for Transmitters 1C71-PT-N052A and -C and one for Transmitters 1C71-PT-N052B and -D. UFSAR Section 7.2.1.1.4.4.2 also discussed two separate sensing lines rather than four. The licensee acknowledged the discrepancy and added a corrective action to the condition report to correct the drawing.

c. Conclusions

The licensee's response to a turbine first stage pressure sensing line failure was in accordance with the procedures and exhibited a good questioning attitude.

E8 Miscellaneous Engineering Issues (92903)

- E8.1 (Closed) Licensee Event Report 50-416/99-006-01: Main steam lines exceeded leakage limits. The failure of six of eight main steam isolation valves to meet the leak rate testing requirements was addressed in NRC Inspection Report 50-416/00-02, and noncited Violation 50-416/0002-01 was initiated for the failure of the licensee to take corrective action to address previous failures of these valves to meet the leakage requirements. The inspectors determined that all the information provided in this supplement was also addressed in the significant event review team report reviewed in NRC Report 50-416/00-02.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

During tours of the controlled access areas, the inspectors observed radiological postings and worker adherence to radiation protection procedures. Personnel followed radiation protection procedures, locked high radiation area doors were locked, and radiation and contamination areas were properly posted.

P3 Emergency Preparedness Procedures and Documentation

P3.1 Emergency Plan Change Review

a. Inspection Scope (82701-03.01)

Inspectors reviewed the following changes to the emergency plan and implementing procedures to determine if they were made in accordance with NRC regulations:

- Revision 39 to the Grand Gulf Nuclear Station Emergency Plan
- Revision 40 to the Grand Gulf Nuclear Station Emergency Plan
- Revision 105 to emergency plan implementing Procedure 10-S-01-1, "Activation of the Emergency Plan"

Revision 105 (corrected) to emergency plan implementing Procedure 10-S-01-1

b. Observations and Findings

The licensee implemented the above changes without prior NRC approval based on its determinations that the changes did not decrease the effectiveness of the emergency plan and that the revised plan continued to meet the requirements of 10 CFR 50.47(b) and 10 CFR Part 50 Appendix E. The inspectors determined that Revision 39 to the emergency plan was made in accordance with NRC requirements.

The inspectors noted that Revision 40 to the emergency plan and Revision 105 to Procedure 10-S-01-1 revised an emergency action level for declaring a general emergency based on a security threat to the plant. The revision changed the threshold for this emergency action level (EAL) from:

"Physical attack on the plant has resulted in unauthorized personnel occupying the Control Room or Remote Shutdown Panel."

to:

"Physical attack on the plant has resulted in unauthorized personnel controlling Decay Heat Removal, Reactor Water Level, or Reactivity Control capability."

The inspectors determined that this EAL change was a decrease of effectiveness of the emergency plan because the revised EAL threshold required the actual manipulation of plant conditions prior to declaring a general emergency. The previous emergency action level was more anticipatory. The new EAL required an interpretation or retention of clarification provided in training; whereas the old one was unambiguous and clear. 10 CFR 50.54(q) requires prior approval for proposed changes that decrease the effectiveness of the approved emergency plans.

The inspectors discussed this concern with the licensee in telephone conversations on December 8, 1999, and March 2, 2000. The licensee stated that the revision to the EAL was not intended to raise its threshold, but to allow inclusion of more areas of the plant where hostile forces could affect plant parameters that would cause core damage. The licensee acknowledged the inspectors' concern and agreed that the EAL needed clarification. The licensee initiated Condition Report CR-GGN-1999-1936 to document the need for additional wording to clarify the EAL. The failure to obtain prior NRC approval for a change that decreased the plan's effectiveness was identified as a violation of 10 CFR 50.54(q). This Severity Level IV violation is being treated as a noncited violation consistent with Section VII.B.1a of the NRC Enforcement Policy (50-416/0003-01).

During the December 8, 1999, telephone conversation, the inspectors notified the licensee of administrative errors found in Revision 39 to the emergency plan and Revision 105 to Procedure 10-S-01-1. Most notable of these was the elimination of a note directing notification of the NRC for declaration of emergency conditions. The licensee explained that the note had been inadvertently removed from the revised procedure and issued a corrected revision to the procedure on January 31, 2000. The inspectors verified that the note had been restored to the procedure. The inspectors did not consider the omission of the note to be a decrease of effectiveness of the emergency plan because the note was contained in other procedures that the licensee would implement for an emergency.

c. Conclusions

Changes made in Revision 39 to the emergency plan were in accordance with NRC requirements. An EAL change involving a security threat general emergency decreased the emergency plan's effectiveness; therefore, it was a violation of 10 CFR 50.54(q). This Severity Level IV violation is being treated as a noncited violation, consistent with Section VII.B.1.a of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report CR-GGN-1999-1936.

S1 Conduct of Security and Safeguards Activities

The inspectors observed the practices of security personnel and the condition of security equipment. Protected and vital area barriers were in good condition. The isolation zones were free of obstructions, and the protected area illumination levels were good. The inspectors concluded that the daily security activities were conducted in a professional manner.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on April 6, 2000. In addition, the inspectors presented the results

of the emergency preparedness portion of the inspection to members of licensee management during a telephonic exit on March 31, 2000. The licensee acknowledged the findings presented with one exception. They disagreed with the NRC's characterization that a recent change to the General Emergency EAL was a reduction in effectiveness. The change that was made expanded the EAL to address processes which would include the two physical locations of the control room and remote shutdown panels. Based on the NRC concern, the licensee questioned various personnel who are responsible for determination of entry into the EAL. For comparison purposes, the EAL conditions are:

1. Prechange words: "Physical attack on the plant has resulted in unauthorized personnel occupying the control room or remote shutdown panel."
2. Postchange words: "Physical attack on the plant has resulted in unauthorized personnel controlling decay heat removal, reactor water level, or reactivity control capability."

These two descriptions were interpreted by key emergency plan directors. The directors were asked to determine if more specific notation in the postchange words would diminish their perspective of a general emergency situation. The results of this check with various personnel and the directors confirmed to the licensee that no reduction in effectiveness occurred. However, since the NRC expressed a possible problem with the change, the licensee initiated a corrective action document. The licensee planned to include the old wording along with the new wording in the EAL.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

C. Bottemiller, Manager, Plant Licensing
B. Edwards, Manager, Maintenance
C. Ellsaesser, Manager, Corrective Action and Assessment
F. Guynn, Manager, Emergency Preparedness
C. Lambert, Director, Design Engineering
J. Roberts, Director, Nuclear Safety Assessment
J. Venable, General Manager, Plant Operations
R. Wilson, Superintendent, Radiation Protection

INSPECTION PROCEDURES USED

37551	Onsite Engineering
61726	Surveillance Observations
62707	Maintenance Observation
71707	Plant Operations
71750	Plant Support Activities
82701	Operational Status of the Emergency Preparedness Program
92903	Followup - Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-416/0003-01	NCV	Emergency action level change resulted in a decrease of effectiveness of the emergency plan (Section P3.1)
----------------	-----	--

Closed

50-416/99-006-01	LER	Main steam lines exceeded leakage limits (Section E8.1)
50-416/0003-01	NCV	Emergency action level change resulted in a decrease of effectiveness of the emergency plan (Section P3.1)