

UNITED STATES

NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400 ARLINGTON, TEXAS 76011-8064

APR - 6 1999

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

SUBJECT: NRC INSPECTION RLPORT 50-416/98-13

Thank you for your letter of February 11, 1999, in response to our December 1, 1998, letter and Notice of Violation 50-416/98013-02, regarding four examples of a failure to follow procedures associated with the partial unlatching of a tool ring during a heavy lift over the reactor.

We have reviewed your reply wherein you indicated that the following statement was not reflective of the adequacy of your onsite investigation, "the violations were not identified through the investigations you heid onsite and have not been entered into your corrective action program." We agree that this statement was not reflective of the quality or thoroughness of the investigation. However, as specified in Section E8.6.6 of NRC Inspection Report 50-416/98-13, the inspectors were concerned that the designated corrective actions in the investigation report were not broad enough to address the failure of the craft personnel to follow procedures and the failure of engineering personnel to understand the regulatory requirements that were in place.

Discussions between Mr. Greg Pick, Acting Chief, Branch A, and Mr. Ken Hughey, Director, Nuclear Regulatory Affairs, on March 30, 1999, resulted in additional corrective action commitments to address this violation. We understand that you will discuss this event and the deficiencies related to the failure to follow procedures at a future all-hands meeting and that your Training Review Group will add a lessons-learned discussion to Engineering Support Personnel training that emphasizes the need to understand regulatory commitments which use this event as an example.

We will review the implementation of your corrective actions during a future inspection to determine that full compliance has been achieved and will be maintained. Should you have questions or concerns related to our understanding of these issues, please contact Joseph Tapia at (817) 860-8243.

Sincerely,

E. Brockman, Director

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Division of Reactor Projects

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

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CC:

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, D.C. 20005-3502

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

President Claiborne County Board of Supervisors Port Gibson, Mississippi 39150

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

The Honorable Richard leyoub 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, Director State Liaison Officer Division of Radiation Health Mississippi Department 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

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

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Regional Administrator DRP Director DRS Director Branch Chief (DRP/A) Project Engineer (DRP/A) Branch Chief (DRP/TSS)

Resident Inspector DRS-PSB MIS System RIV File

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Entergy Operations, Inc. P.O. Box 756 Port Gibson, MS 39150 Tel 601 437-6470

W. K. Hughey Director Nuclear Safety & Regulatory Affairs

February 11, 1999

U.S. Nuclear Regulatory Commission Mail Station P1-37 Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station, Unit 1 Docket No. 50-416 License No. NPF-29 Reply To A Notice Of Violation Report No. 50-416/98-13 Dated 12/1/98 (GNRI-98/00135)

FEB 2 3 1999

GNRO-99/00014

Gentlemen:

Entergy Operations, Inc. (EOI) hereby submits the Reply to Notice of Violation 50-416/98-13-02 for Grand Gulf Nuclear Station. This Notice of Violation was issued as a result of NRC Inspection 50-416/98-13 conducted during the period of September 20 through October 31, 1998. EOI concurs that the overall findings of the inspection are valid in that the specific examples identified are indicative of failure to follow established station procedures.

EOI would like to take this opportunity to address the NRC's statement contained in the cover letter of the report which states, "the violations were not identified through the investigations you held onsite and have not been entered into your corrective action program." EOI does not totally agree with these statements as reflective of the adequacy of our onsite investigation. Rather, we believe these statements were made in regard to the identified voluntary report to the NRC (LER-98-003-00). In this report (and confirmed within the final Root Cause Report RCDL 98-020) two primary root causes were identified as a result of this event. The LER intentionally did not embellish on the identified contributing causes since these are somewhat site specific and the intent of the voluntary LER was to share generic industry iessons learned.

In addition to the two primary root causes that EOI identified, five contributing causes were identified in the final Root Cause Report (RCDL 98-020). These five items were considered contributing causes because they would not have directly prevented this event. Nevertheless, each of the contributing causes confirms the NRC's findings within the subject inspection report. As previously stated, EOI concurs with the NRC findings that examples of failure to follow procedures contributed to this event. Each of the contributing causes associated corrective actions and is included in our corrective action program.

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Based on the NRC comments related to the adequacy of the root cause, an independent review of the root cause report was performed by a member of our Corporate Licensing group. The review found that the deficiencies which resulted in these violations were addressed in the root cause report and that the corrective actions appeared to be adequate to prevent recurrence of the event. However, the reviewer noted that the root cause report was, in some cases, difficult to follow and that pertinent details were either weakly presented or lacking from the report (i.e. each procedural deficiency may not have been discussed). We recognize the difficulty this may have caused the NRC in determining if the deficiencies that resulted in this violation had been addressed. We believe this difficulty was due in part to the focus of the root cause report. Our root cause analysis was focused on the barriers that would have prevented this event (i.e. Primary Root Cause). As such, the deficiencies noted in the violation were expressed as contributing factors rather than primary causes of the event.

This in no way minimizes the importance of adequately addressing the contributing causes or the need to capture these within our corrective action program. It simply is an agreement with our belief that correcting the contributing causes without addressing the primary root causes would not likely prevent recurrence of the event.

In sum nary, we believe our onsite investigation did confirm many examples of failure to follow procedures. More importantly, we believe that our identified corrective actions are adequate to prevent recurrence and are contained within the Grand Gulf Nuclear Station corrective action program. However, we do acknowledge that our Root Cause Report could have been better written and possibly clearer in terms of actual procedural deficiencies.

Should you have any questions or require clarification of our response, please contact this office.

Yours truly,

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WKH/cdh/jeo attachments:

ts: 1) Response to Notice of Violation 50-416/98-13-02

Ms. J. L. Dixon-Herrity, GGNS Senior Resident (w/a)
Mr. L. J. Smith (Wise Carter) (w/a)
Mr. N. S. Reynolds (w/a)
Mr. H. L. Thomas (w/o)

Mr. Ellis W. Merschoff (w/a) Regional Administrator U.S. Nuclear Regulatory Commission Region IV 611 Ryan Plaza Drive Suite 400 Arlington, TX 76011

Mr. J. N. Dono, w. Project Manager (w/2) Office of Nuclear Reactor Regulation U.S. Nuclear Regulatory Commission Mail Stop 13:43 Washington, D.C. 20555

Response to Notice of Violation 98-13-02

During an NRC inspection conducted on September 20 through October 31, 1998, one violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions, " NUREG-1600, the violation is listed below:

10 CFR Part 50, Appendix B, Criterion V, requires that activities affecting quality be prescribed by documented instructions or procedures of a type appropriate to the circumstances and that the activities be accomplished in accordance with the procedures.

Contrary to the above, as of May 7,1998, the following examples were identified:

1. Procedure 01-S-17-5, "Engineering Request," Revision 6, Section 6.5.3, states that an engineering reply response provides information obtained from existing reference documents or standard engineering practices, or elaborates on or interprets existing information. This type of response cannot be used to change plant documents or design or to control actions in the field. Section 6.9.1 states that the responsible engineer is to address all issues relevant to the request and to document a complete response to the engineering request and that a 10 CFR 50.59 safety review is not required for an engineering reply.

The engineering reply written in response to Engineering Request 98/0209, which requested that the rigging fixtures for the theta drive and R-Z drive be evaluated, did not provide information from reference documents or standard engineering practices or elaborate on or interpret existing information. The reply evaluated vendor provided calculations and provided guidance which failed to take into account Updated Final Safety Analysis Report and site procedure requirements regarding heavy lifts over the core. In addition, the engineering reply was used to provide direction for control of actions to be taken on the refueling floor.

2. Procedure 07-S-05-300, "Control and Use of Cranes and Hoists," Revision 104, Section 6.3.7, requires that loads in excess of 1140 lbs. have special lift procedures. Procedure 07-S-05-310, "Operation of Containment Polar Crane," Revision 100, is referenced by Procedure 07-S-05-300 and provides information necessary to safely handle loads with the polar crane. Section 6.1.3 of Procedure 07-S-05-310 requires that all Safety Class 1 loads have special lift procedures.

The special lift procedure used during the lift on May 7,1998, was not appropriate to the circumstances in that the procedure failed to limit the time and the height the load was carried over the area of concern, contained no inspection requirements or acceptance criteria to be met prior to movement of the load, and did not address special precautions. The procedure used, Procedure STD-FP-1 996-7674, "BWR Shroud Inspection Tooling Installation and Removal," Revision 2 was a generic procedure developed by the vendor and was not reviewed or approved by the licensee to verify that it met the licensee's program requirements for heavy lifts.

3. Procedure 01-S-06-24, "Safety and Environmental Evaluations," Revision 103, Section 6.3.1, requires that new procedures with the potential for adversely affecting the environment and operation of structures or components in the Updated Final Safety Analysis Report be reviewed for safety evaluation applicability.

Procedure 07-S-05-310, "Operation of Containment Polar Crane," Revision 100, Attachment 1 requires that loads greater than 1140 lbs. shall not be carried over fuel assemblies stored in the reactor cavity without a safety evaluation.

No safety evaluation or safety evaluation applicability screen was performed prior to installing or removing the Theta Drive (total lift weight, 1490 lbs.) or the R-Z Mast (total lift weight, 1250 lbs.) in the reactor vessel while fuel was in the reactor during Refueling Outage 9.

 Procedure 01-S-06-2, "Conduct of Operations," Revision 104, Section 6.7.6, requires that the refuel floor supervisor notify the shift superintendent before the start of any major evolution.

The refuel floor supervisor assigned to supervise the removal of the heavy equipment from the reactor vessel did not notify the shift superintendent prior to commencing the heavy lift over the reactor vessel, a major evolution.

This is a Severity Level IV violation (Supplement I) (50-416/9813-02).

I. Admission or Denial of the Violation

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Entergy Operations, Incorporated (EOI) admits to this violation.

II. The Reason for the Violation, if Admitted

When performing the root cause analysis for the core shroud inspection tool partial unlatching event, EOI sought to determine what barriers would have prevented the ring from coming unlatched. It was concluded that the partial ring separation from its strongback could be attributed to two primary causes:

- 1. Valve manipulations performed during the lifting of the shroud inspection tool permitted air to be vented into the reactor vessel during the core shroud inspection ring lift. No formal controls were present to ensure venting of the type experienced during this refueling outage (i.e. LLRT valve restorations/maintenance) does not occur during lifts of this type.
- 2. The possibility of various upset conditions (including air/water introduction to vessel) was not considered as a design parameter by the vendor, nor were precautions or limitations of use identified. As a result, the latching mechanism used to attach the Theta Drive and ring to the lifting device was not designed to resist the rotational loads imposed during the period when the ring was observed to pitch and oscillate.

The corrective actions associated with these primary causes were previously shared with the NRC in LER 98-003-00.

Several other barriers (i.e. failure to follow procedures as noted in this violation) were also examined during the performance of the root cause analysis. It was concluded that the failure to follow procedures was not the primary cause of this event. EOI does recognize the failure to follow the noted procedures as contributing to the occurrence of the event and thus also must have corrective actions as noted.

Reason for violation Example 1)

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Grand Gulf Nuclear Station (GGNS) site procedure 07-S-05-300 provides general instruction for handling loads over the reactor cavity. These instructions, consistent with the basic requirement for safe load paths provided in NUREG-0612, 5.1.1 (1), provides acceptable practices which mitigate the consequences of a load handling incident. The guidance provided in the Engineering Reply (ER) was viewed as elaboration or interpretation of existing information contained within plant procedure 07-S-05-300, Section 6.3.5. Good practice as stated in the procedure is to minimize the height and time a load is suspended over fuel. The ER elaborated on this section to remind plant personnel that this is always a good practice whether over fuel or not. When traveling over the refuel floor, it is also good practice to minimize the height to which the load is lifted. An ER is considered an appropriate means for providing elaboration or clarification of existing information. However, we understand how the requirement to minimize the load height above the refuel floor could be viewed as a new requirement. In addition, we recognize that the requirements for handling of heavy loads at GGNS were fragmented and contained in several documents.

Reason for violation Example 2)

GGNS procedure requires contractor's special process procedures used to perform examinations or inspections be reviewed and approved by the site organization responsible for performance of GGNS inspection activities. On March 23, 1998, vendor procedures for ultrasonic exam (NDE) of welds were formally transmitted to the NDE Supervisor for review and approval. Although the work was performed using the procedures related to equipment installation and removal (support procedures), they were neither formally transmitted to nor requested by site personnel and were not signed for approval by site personnel. While procedures pertaining to the specific inspections were reviewed and approved, it was not well understood by GGNS staff what level of review and approval was required for vendor support procedures.

Reason for violation Example 3)

The vendor was on the GGNS quality supplier list and working to their 10CFR Appendix B program. Conduct of maintenance procedure (07-S-01-205, section 6.1.4) allows work by vendor documents provided the vendor program is an EOI approved quality assurance program. Therefore, it was considered that the procedure did not require a Safety Evaluation per 01-S-06-24.

The requirement to perform a safety evaluation was contained in the attachment to plant procedure 07--05-310, but not called out in the body of the procedure. Personnel involved in this event were not cognizant of the statement contained in the attachment to plant procedure 07-S-05-310. This resulted in the requirement to perform a safety evaluation being missed.

Per 01-S-17-5, Revision 6, "Engineering Request", an Engineering Reply does not require a Safety Evaluation or Safety Evaluation Applicability Review to be performed because a reply, by definition, is only used to elaborate the interpret existing information.

Consequently, no Safety Evaluation or Safety Evaluation Applicability Review was performed.

Reason for violation Example 4)

The cause of this violation example is that there were no clear expectations as to what constitutes "major evolutions". Removal of the core shroud tool had been discussed at the scheduled turnover meetings which included Operations. However, because the installation, operation, and removal of the shroud inspection tooling were not determined to be major evolutions; communications with the control room at the start of the evolution did not occur as required by procedure 01-S-06-2, "Conduct of Operations".

III. Corrective Steps Which Have Been Taken and Results Achieved

A root cause analysis for the core shroud inspection tool partial unlatching event was performed, a corrective action plan was implemented and LER 98-003-00 was submitted. The immediate corrective actions associated with the core shroud inspection tool partial unlatching event were previously shared with the NRC in LER 98-003-00.

In response to example 2, an evaluation was conducted to determine which existing vendor contracts should contain requirements for review and approval of vendor support procedures prior to use at GGNS. Appropriate contracts have been modified to include a requirement for review of vendor support procedures.

Completion of all other corrective actions is pending.

IV. Corrective Steps to be Taken to Preclude Further Violations

Corrective steps for Example 1)

1. GGNS will re-enforce that an Engineering Reply response provides information obtained from existing reference documents or standard engineering practices, or elaborates on or interprets existing information. This will be communicated to Design Engineering personnel.

Corrective steps for Example 2)

- 1. GGNS will clarify requirements for review of vendor supplied documents through procedure revisions and training to preclude recurrence of this issue for both Safety-related or non-Safety related work.
- Design Engineering will issue an Engineering Standard which documents acceptable practice when performing evaluations related to compliance with GGNS commitments to NUREG 0612.
- 3. Mechanical Maintenance will revise 07-S-05-300 and 07-S-05-310 as appropriate once the Standard is issued.

Corrective steps for Example 3)

- 1. GGNS will review site procedure 01-S-06-24 and provide appropriate guidance for what constitutes a new procedure with relation to vendor supplied procedures.
- 2. During the course of the Root Cause Assessment, no basis for the safety evaluation requirement listed in the attachment to 07-S-05-310 could be determined. GGNS site procedure 07-S-05-310 is included in the overall procedural review to be conducted as part of corrective actions associated with this event and will be revised as appropriate.
- 3. GGNS will re-enforce that an Engineering Reply response provides information obtained from existing reference documents or standard engineering practices, or elaborates on or interprets existing information. This will be communicated to Design Engineering personnel.

Corrective steps for Example 4)

 "Operations to revise procedures ... to provide for improved notification between refuel floor and control room when performing critical lifts over the vessel with the overhead crane. Also, Operations will put in place administrative controls for performing evolutions which could result in potential inputs to the reactor vessel (air/water) as a result of valve alignments." This corrective action was previously shared with the NRC in LER 98-003-00.

V. Date When Full Compliance Will be Achieved

Full compliance was achieved upon removal of the core shroud inspection ring from the vessel core area. All remaining corrective actions associated with this event are scheduled for completion by 09/30/99.