



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV

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

JUN 22 1994

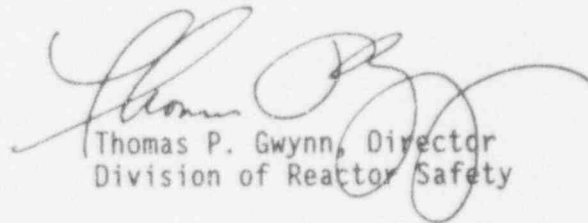
Docket: 50-382  
License: NPF-38

Entergy Operations, Inc.  
ATTN: Ross P. Barkhurst, Vice President  
Operations, Waterford  
P.O. Box B  
Killona, Louisiana 70066

SUBJECT: NRC INSPECTION REPORT 94-06

Thank you for your letter of June 3, 1994, in response to our letter and Notice of Violation dated May 6, 1994. We have reviewed your reply and find it responsive to the concerns raised in our Notice of Violation. 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.

Sincerely,



Thomas P. Gwynn, Director  
Division of Reactor Safety

cc:  
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Entergy Operations, Inc.

-3-

E-Mail report to D. Sullivan (DJS)

bcc to DMB (IE01) - DRS and DRP

bcc distrib. by RIV:

L. J. Callan  
Branch Chief (DRP/D)  
MIS System  
RIV File  
Branch Chief (DRP/TSS)  
I. Barnes

Resident Inspector  
Leah Tremper, OC/LFDCB, MS: MNBB 4503  
DRSS-FIPB  
Project Engineer (DRP/D)

RIV:RI:DRS <i>[Signature]</i>	TA:DRS <i>[Signature]</i>	ADD:DRS <i>[Signature]</i>	D:DRP	D:DRS <i>[Signature]</i>
WMMcNeill <i>[Signature]</i>	IBarnes <i>[Signature]</i>	JLPellet <i>[Signature]</i>	ABBeach <i>[Signature]</i>	TPGwynn
06/21/94	06/21/94	06/21/94	06/21/94	06/22/94

Entergy Operations, Inc.

-3-

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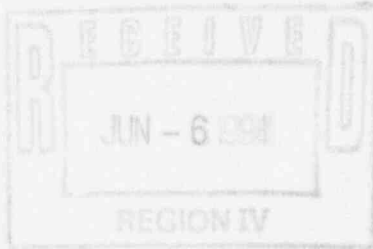
RIV:RI:DRS	TA:DRS	ADD:DRS	D:DRP	D:DRS
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**ENTERGY**

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**R. F. Burski**  
Director  
Nuclear Safety  
Waterford 3

W3F1-94-0079  
A4.05  
PR

June 3, 1994

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Subject: Waterford 3 SES  
Docket No. 50-382  
License No. NPF-38  
NRC Inspection Report 94-06  
Reply to Notice of Violation

Gentlemen:

In accordance with 10CFR2.201, Entergy Operations, Inc. hereby submits in Attachment 1 the response to the violation identified in Appendix A of the subject Inspection Report.

If you have any questions concerning this response, please contact W.H. Pendergrass at (504) 739-6254.

Very truly yours,

R.F. Burski  
Director  
Nuclear Safety

RFB/WHP/tjs  
Attachment

cc: L.J. Callan (NRC Region IV), D.L. Wigginton (NRC-NRR),  
R.B. McGehee, N.S. Reynolds, NRC Resident Inspectors Office

~~4400070322~~ LPP

94-1140

ATTACHMENT 1

ENERGY OPERATIONS, INC. RESPONSE TO THE VIOLATION IDENTIFIED IN  
APPENDIX A OF INSPECTION REPORT 94-06

VIOLATION NO. 9406-01

During an NRC inspection conducted February 28 through March 4, March 14-18 and 28-29, 1994 one violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the violations are listed below:

License Contracts W-1033-0002 and W-1033-0006, which are applicable, respectively, to Refueling Outage RF5 (1992) and Refueling Outage RF6 (1994) eddy current examination services, require the supplier (i.e. Conam) to maintain and comply with a quality assurance program that complies with Appendix B to 10 CFR 50.

Criterion V of 10 CFR 50, Appendix B, states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

Paragraph 8.3.1 in Conam Procedure 42-EC-227, "Multifrequency Eddy Current Procedure Steam Generator Tubing Digital Eddy Current System Waterford 3," Revision 1, states, in part, "When a remote fixture is used, positive visual tube identification will be made by the lead operator, shift supervisor, or job supervisor. Verification will be made on the peripheral tube in each column. The use of known landmarks, such as plugged tubes and tube sheet maps may be used to aid in the verification."

Contrary to the above:

1. Installation and operation of Zetec SM-22 robotic fixtures, which were used during Refueling Outage RF6 in 1994 to position eddy current probes on the face of the steam generator tube sheet, were not prescribed by documented instructions, procedures, or drawings.

2. Positive visual tube identification was not consistently performed during Refueling Outage RF5 in 1992, as evidenced by the discovery during the following outage that incorrect tube locations had been identified in 1992 for 21 tubes that were examined by the bobbin coil method. Verification was primarily performed using landmarks, with only a limited number of peripheral tubes in columns being subject to verification.

This is a Severity Level IV violation (Supplement I) (382/9406-01)

## RESPONSE

### (1) Reason for the Violation

Entergy Operations Inc. admits this violation and believes that the root cause for the examples cited can be characterized as follows:  
A) for not having Work Instruction WI-016, "Working Instructions for Installing, Operating, and Removing the SM-10/20/22 Fixture Using Lan Acquisition System" available on-site for use during installation activities of the Zetec SM-22 robotic fixture, wrong assumptions were made during the initial review of contractor information and procedures, and B) for errors during eddy current data acquisition activities, inappropriate actions were taken by data acquisition personnel in that the data acquisition personnel did not completely follow the established procedure 42-EC-227, "Multifrequency Eddy Current Procedure Steam Generator Tubing Digital Eddy Current System Waterford 3."

- A) During Refuel 6 the Zetec SM-22 robotic fixture was used in the process of steam generator eddy current data acquisition. This robotic device was installed in the Steam Generators according to Conam Work Instruction WI-016, "Working Instructions for Installing, Operating, and Removing the SM-10/20/22 Fixture Using the Lan Acquisition System". Although this procedure was not present on-site when the installation occurred, Conam personnel felt that they were sufficiently knowledgeable of the procedural requirements to install this robotic tool without reference to the procedure. It was Conam's belief that since this robotic device was considered a working tool and was governed by an internal proprietary work instruction it did not meet the criteria for utility review prior to start of work, and thus was not submitted with the information and procedures reviewed by Waterford personnel prior to start of work. As a result of these assumptions, the work instructions were not available for onsite reference.

- B) During Refueling Outage 6, the Conam analysts identified that 21 bobbin coil inspected tubes in Steam Generator 1 had been incorrectly identified in the examinations performed during Refueling 5 in 1992. The errors were determined to have occurred only in Calibration Group 25. The chronology, as determined by Conam personnel is as follows: 1) following the running of the calibration standards and a fixture position verification using a plugged tube location of Row 90, Line 132 the operator ran a tube with an incorrect encode of Row 91, Line 98 ( i.e., only combinations of odd numbered rows and lines or even numbered rows and lines exist); 2) this tube was not entered on the report by the analyst because of the odd/even encode; and 3) as a result the next 20 tubes were run with an encode of line 148. However, the row encode was one row higher than the actual tube row number. It was determined that the acquisition personnel appeared to rely primarily on use of landmarks such as plug locations and stay rods for verification of fixture location, with only limited verification on the peripheral tube in each column. Although not an uncommon acceptable practice, this was contrary to procedure 42-EC-227, "Multifrequency Eddy Current Procedure Steam Generator Tubing Digital Eddy Current System Waterford 3," which requires that a verification be made by the lead operator, shift supervisor, or job supervisor on the peripheral tube in each column. The use of known landmarks, such as plugged tubes and tube sheet maps are permitted to be used as an aid in the fixture location verification process.

In addition to the Refuel Outage 5 tube encoding anomalies discovered by the analyst during Refuel 6, the vendor also identified that 16 bobbin coil examinations and two upper bundle Motorized Rotating Pancake Coil (MRPC) calibration groups were encoded incorrectly during Refuel Outage 6. This identification was accomplished during data analysis which procedurally follows data acquisition in the eddy current testing process. As such, the data for the incorrectly encoded tube locations was re-acquired prior to the end of the Steam Generator outage window.

For this event the actions of the data acquisition personnel can be characterized as inappropriate in that they were remiss in referring to the appropriate peripheral tube for each column as stated in procedure 42-EC-227 in addition to making erroneous encode entries for tube locations during Refuel 5 and Refuel 6.



(2) Corrective Steps That Have Been Taken and the Results Achieved

- A) Upon identification of the need to have the Work Instruction WI-016 on-site, Conam personnel obtained the instruction from their California office and provided it for review. In addition, Condition Report CR-94-225 was written to document this occurrence.

The Condition Report describing this event was routed through Design Engineering-Inservice Inspection group, for documented review, to emphasize Design Engineering's responsibility to ensure vendor procedures and instructions are available for review while performing work onsite.

- B) The samples taken in Refuel Outage 5, in 1992, were taken from a planned random sample selection. The Technical Specifications require a minimal inspection of 3% of the total number of tubes in all Steam Generators. In Refuel Outage 5, Waterford 3 initially sampled 21% of the total number of tubes in each Steam Generator. The Waterford 3 Steam Generator eddy current scope for Refuel Outage 6 was 100% full length bobbin coil inspection, which facilitated the identification of the 21 incorrectly encoded tubes. The Conam process of comparing tube fingerprints acquired during data collection, to historical tube fingerprints allowed the analysts to identify the incorrectly encoded tubes. When the incorrectly encoded tubes were identified Conam issued a letter to the Waterford 3 ISI group informing them of this matter and that there was no tube wall degradation noted in the affected tubes in 1992 or 1994. Waterford 3 personnel issued a Condition Report, CR-94-368, to document this event.

Additionally, the vendor issued a report stating that supervisors must reiterate the seriousness of initialing fixture position verifications on the operator data sheets. In addition, personnel must be aware that failure to do so is in direct violation of the written procedure.

To address this violation, Waterford 3 management has issued a letter to Conam stressing complete procedural compliance. Additionally, Waterford 3 management requires that all work instructions affecting quality related work shall be available onsite for review prior to the start of work.

(3) Corrective Steps Which Will Be Taken To Avoid Further Violations

- A) Design Engineering procedure, NOECP-252, Steam Generator Eddy Current Inservice Testing, will be revised to ensure vendor Work Instructions will be available for review while vendors are performing work onsite.
- B) Design Engineering procedure, NOECP-252, Steam Generator Eddy Current Inservice Testing, will be revised to ensure future audits and/or surveillances of vendor work in the Steam Generators will emphasize proper procedure compliance for fixture location and tube identification.

4) Date When Full Compliance Will Be Achieved

The revision to Design Engineering procedure NOECP-252, will be completed by 9/30/94 at which time Waterford 3 will be in full compliance.