



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV

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ARLINGTON, TEXAS 76011-8064

FEB 16 1995

Entergy Operations, Inc.  
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1448 S.R. 333  
Russellville, Arkansas 72801-0967

SUBJECT: NRC INSPECTION REPORT 50-313/94-09; 50-368/94-09

Thank you for your letter of February 3, 1995, in response to our letter and Notice of Violation dated January 4, 1995. 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,

A. Bill Beach, Director  
Division of Reactor Projects

Dockets: 50-313  
50-368  
Licenses: DPR-51  
NPF-6

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Entergy Operations, Inc.

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FEB 16 1995

Entergy Operations, Inc.

-3-

bcc to DMB (IE01)

bcc distrib. by RIV:

L. J. Callan

Branch Chief (DRP/D)

MIS System

RIV File

Project Engineer (DRP/D)

Resident Inspector

Leah Tremper (OC/LFDCB, MS: TWFN 9E10)

DRSS-FIPB

Branch Chief (DRP\TSS)

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FEB 16 1995

Entergy Operations, Inc.

-3-

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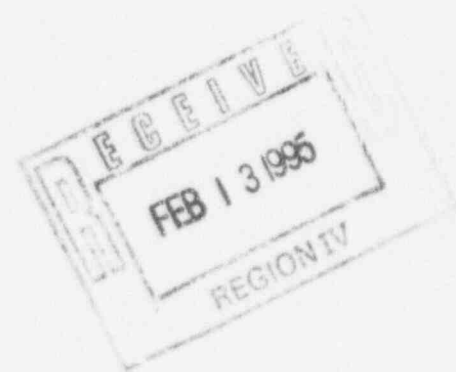
**ENTERGY**

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February 3, 1995

OCAN029502

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Mail Station P1-137  
Washington, DC 20555



Subject: Arkansas Nuclear One - Units 1 and 2  
Docket Nos. 50-313 and 50-368  
License Nos. DPR-51 and NPF-6  
Response to Inspection Report  
50-313/94-09; 50-368/94-09

Gentlemen:

Pursuant to the provisions of 10CFR 2.201, attached is the response to the two violations identified during the inspection of activities associated with failure to update the Safety Analysis Report to be consistent with the Technical Specification amendments and a failure to control insulation removal which resulted in an inoperable boric acid system flow path.

Should you have questions or comments, please call me at 501-858-4601.

Very truly yours,

*Dwight C. Mims*  
Dwight C. Mims  
Director, Licensing

DCM/AJG

Attachments

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U. S. NRC  
February 3, 1995  
OCAN029502 PAGE 2

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During an NRC inspection conducted on October 16 through November 26, 1994, two violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10CFR Part 2, Appendix C, the violations are listed below:

- A. 10CFR 50.71(e) requires the licensee to update the Final Safety Analysis Report to include all safety evaluations performed by the licensee in support of requested license amendments.

Contrary to the above, on November 1, 1994, the inspector identified that the licensee failed to update the Unit 2 Safety Analysis Report, Table 15.1.0-1, with the revised departure from nucleate boiling and low steam generator water level reactor protection setpoints when the licensee received NRC approval of Technical Specification (TS) Amendments 65 and 66.

This is a Severity Level IV violation (Supplement VII) (368/9409-02).

- B. Unit 1 TS 6.8.1 requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedure recommended in Appendix A of Regulatory Guide 1.33, November 1972. Regulatory Guide 1.33, Appendix A, Section I.1, "Procedures for Performing Maintenance," states, in part, that maintenance which can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances.

Contrary to the above, the licensee performed maintenance on the boric acid system in accordance with a procedure, which was inappropriate to the circumstances. Specifically, the licensee removed insulation from the boric acid lines during the performance of a non-safety-related job order. These instructions were not appropriate because they did not control the removal or replacement of the insulation and allowed the boric acid system line temperature to decline below the minimum temperature required by Technical Specifications. As a result, on September 28, 1994, the NRC inspector discovered that the boric acid line temperature was less than the TS required minimum, which rendered the flow path inoperable.

This is a Severity Level IV violation (Supplement I) (313/9409-03).

A. Response to violation 50-368/9409-02

(1) Reason for the violation:

During 1991, Arkansas Nuclear One (ANO) identified that the Safety Analysis Reports (SARs) for both units had not been revised as required to document changes resulting from various activities. One of these activities was review of Technical Specification (TS) amendments. The reason the SARs were not revised was evaluated as being a procedural weakness. This weakness was the lack of direction to review and document Licensing Basis Document (LBD) impact for certain types of out-going correspondence to the NRC. This weakness was corrected by a subsequent procedure revision.

As part of the corrective action plan for the problem identified in 1991, an action was initiated to review SARs for both units and revise them as necessary to reflect previous TS amendments. Because of the scope of this task and limitations on ANO internal resources, a contract was established to review TS amendments against the SARs and identify appropriate changes. This effort identified the need for changes to both SARs. Documentation indicates that the contractor did not identify a SAR impact for ANO-2 TS Amendment 65 or 66. Considering prior satisfactory experience with the contractor's work quality and limitations on internal resources, the contractor's work product was not reviewed. ANO personnel completed the 10CFR 50.59 reviews and processed the SAR changes based upon the contractor input.

The nominal trip setpoints for low Departure from Nucleate Boiling Ratio (DNBR) and low steam generator water level are included in ANO-2 SAR Table 15.1.0-1, *Reactor Protective System Trips Used In The Safety Analysis*. The trip setpoints are also contained in ANO-2 SAR Table 7.2-4, *Reactor Protective System Instrument Ranges And Margins To Trip*. The setpoint for the steam generator water level trip is also contained in ANO-2 SAR Table 7.3-5, *Safety-Related System Instrument Ranges, Setpoints, And Margins To Actuation*. Even though the review for TS Amendment 65 or 66 did not identify a need to change Table 15.1.0-1, the ANO-2 SAR had been revised in the other areas affected by the two TS amendments. Therefore, at the time this condition was identified, the values for these two parameters were correct in Table 7.2-4 and Table 7.3-5.

The Licensing Document Change Request process for changing the SAR was reviewed and it was determined that it contains sufficient checks and reviews by the applicable disciplines.

The root cause ANO-2 SAR Table 15.1.0-1 was not revised for TS Amendments 65 and 66 was human error. The human error involved both ANO personnel who initiated the SAR changes and/or performed the LBD impact review associated with the 10CFR 50.59 review for Table 7.2-4 and Table 7.3-5 as well as the contractor performing the review of SARs for TS amendment impact.

(2) Corrective steps that have been taken and the results achieved:

A Licensing Document Change Request (LDCR) was initiated to correct the errors identified in ANO-2 SAR Table 15.1.0-1. However, upon further reviews of Table 15.1.0-1, it was determined that the table represents historical information and the nominal setpoints and uncertainty values in the table are being removed to avoid future misunderstandings.

A memorandum discussing the violation and its cause was transmitted to 10CFR 50.59 certified reviewers to read and sign in order to make them aware of lessons learned from this condition.

(3) Corrective steps that will be taken to avoid further violations:

A sampling of approximately 10% of those TS amendments that were indicated by the contractor as having no SAR impact will be evaluated. The sampling will determine whether additional corrective action is necessary for TS amendment impact on the SARs. This action will be completed prior to March 31, 1995.

(4) Date when full compliance will be achieved:

Full compliance will be achieved with the next revision of the ANO-2 SAR which is scheduled for six months following the completion of refueling outage 2R11, currently planned to begin in the Fall of 1995.

B. Response to violation 50-313/9409-03

(1) Reason for the violation:

Insulation was found removed from the Arkansas Nuclear One - Unit 1 (ANO-1) Boric Acid Addition Pumps, P-39A and P-39B, discharge check valves CA-66A and CA-66B. The insulation was removed on August 17, 1994, for Non Intrusive Testing (NIT) and the valves remained uninsulated until September 28, 1994. The NIT involved acoustically monitoring the stroke of the check valves and it was necessary to remove the CA-66A and CA-66B insulation to connect the NIT instrumentation.

On August 17, 1994, the engineer performing the NIT contacted maintenance personnel who removed the insulation for both valves CA-66A and CA-66B using a Planned Maintenance (PLM) Job Order (JO). On August 18, 1994, an NIT was performed on valve CA-66A. The NIT on valve CA-66B was deferred until the next P-39B pump surveillance which was performed on September 27, 1994. The insulation on valves CA-66A and CA-66B remained off until September 28, 1994.

On September 27, 1994, check valve CA-66B was tested by the NIT engineer. The test proved that P-39B was capable of performing its Technical Specification (TS) function. After the test was completed, the engineer performing the NIT was unable to notify maintenance personnel to reinstall the insulation on the check valves; however, operations personnel were notified of the NIT completion on CA-66B.

On September 28, 1994, the temperature difference between CA-66A and CA-66B was identified by the NRC resident inspector. The TS requires that the boric acid addition piping and valves in the affected flow path to the makeup system have a temperature of at least 10°F above the crystallization temperature for the boric acid concentration of the Boric Acid Addition Tank (BAAT). The surface temperature measurement indicated valve CA-66B was 95°F which was below the TS minimum temperature for operability of 103°F. Valve CA-66A remained above the required TS minimum temperature.

The root cause of this condition is a personnel knowledge deficiency concerning heat trace system response when insulation is removed from the boric acid addition system. This lack of knowledge was the key factor in allowing the insulation to remain off the system. The departments involved with the equipment did not initially recognize the safety significance of the missing insulation on the boric acid addition system.

A contributing cause was no abnormalities were indicated by the installed system monitoring instrumentation. An operator, using the local panel indications, verifies at least once each shift that the boric acid addition system temperatures are reading greater than the required TS minimum temperature. The system log readings were reviewed from August 17, 1994, through September 28, 1994, and no abnormalities were noted with the associated heat trace

circuits. It was concluded that the instrumentation was not intended to detect conditions resulting from removed insulation.

Another contributing cause was removal of the insulation on a quarterly maintenance PLM that was formatted as a "blanket Job Order." The PLM allows multiple instances of insulation removal over a three month time period without issuing a new JO for each case. The PLM has provisions for tracking insulation removal, but was not "system specific." Even though the PLM requires operations personnel approval at the beginning of the quarter, the PLM did not require operations personnel approval for each individual case of insulation removal. Also, the PLM did not contain a statement limiting the scope of the PLM to only non-safety significant equipment.

(2) Corrective steps that have been taken and the results achieved:

Boric Acid Addition Pump P-39B was declared inoperable at 1015, September 28, 1994, following the surface temperature measurement of valves CA-66A and CA-66B. The measurement revealed temperatures of 142°F and 95°F, respectively. The CA-66B valve temperature was less than 10°F above the BAAT crystallization temperature. The setpoint of the thermostat for the CA-66B heat trace string was increased, and the surface temperature of CA-66B was brought above the required TS minimum specification of 103°F. Pump P-39B was declared operable at 1210, September 28, 1994, following the heat trace setpoint adjustment and the flow verification test via recirculation of the BAAT using P-39B.

On September 28, 1994, insulation on CA-66A and CA-66B was replaced, and the thermostat for the CA-66B heat trace string was returned to normal.

On September 29, 1994, the PLM for the insulation removal was revised to include an operations department approval on the insulation tracking log. The insulation tracking log was reviewed to verify that no other boric acid heat trace insulation had been removed.

The boric acid system piping insulation was inspected and three additional instances of deficient insulation were found and repaired by September 29, 1994. The piping surface temperature measurements were above the TS required minimum. Therefore, there were no immediate operability concerns identified.

The engineering group that performed the NIT on the boric acid addition system discussed the identified condition and the impact that the performance of an NIT may have on other TS related system operability. This review was completed on December 2, 1994.

Plant modifications personnel discussed the identified condition and the significance of removing insulation or heat tracing on a vessel or piping system without first understanding the effect on the system. This review was completed on December 15, 1994.

This condition was discussed with ANO-1 operations personnel. This discussion also included information about the boric acid addition heat trace system and emphasized the importance of maintaining the insulation integrity. This review was completed on January 5, 1995.

(3) Corrective steps that will be taken to avoid further violations:

The process for insulation removal and installation was evaluated and a change to Procedure 1000.024, *Control of Maintenance*, was determined necessary to avoid future problems. When insulation is removed from safety related or TS related systems a system specific Job Order (JO) will control the job process. The JO will include a required *Insulation Tracking* form that will address the safety related or TS operability concerns for the system. The *Insulation Tracking* form will require an engineer's concurrence to verify the system's operability when the insulation is removed. A Senior Reactor Operator's concurrence will also be required before the removal of the insulation. Procedure 1000.024, *Control of Maintenance* will be revised by February 10, 1995.

(4) Date when full compliance will be achieved:

Full compliance was achieved on September 28, 1994, when the insulation was replaced, the heat trace setpoint was returned to normal, and the flow verification via recirculation of the BAAT using P-39B was completed.