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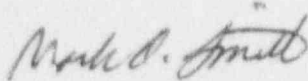
Subject: Arkansas Nuclear One - Unit 1  
Docket No. 50-313  
License No. DPR-51  
Response To Inspection Report  
50-313/96-09; 50-368/96-09

Gentlemen:

Pursuant to the provisions of 10CFR2.201, attached is the response to the notice of violations identified during the inspection activities associated with the improper clearance of a hold card and a failure to update the Safety Analysis Report (SAR).

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

Very truly yours,



*for* Dwight C. Mims  
Director, Nuclear Safety

DCM/ajs

Attachments

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## NOTICE OF VIOLATION

During an NRC inspection conducted on December 22, 1996, through February 1, 1997, two violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violations are listed below:

- A. Unit 1 Technical Specification 6.8.1 states, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, November 1972.

Paragraph A.3 of Regulatory Guide 1.33, November 1972, states, in part, that equipment control (e.g., locking and tagging) should be covered by written procedures.

Procedure 1000.027, Revision 22, "Hold and Caution Card Control," Step 6.9.2, directs the shift superintendent/control room supervisor to verify, prior to authorizing hold card removal and system restoration, that the signature of the lead craftsman has been obtained, signifying release of the hold cards for the work activity.

Contrary to the above, on January 13, the Unit 1 control room supervisor failed to verify that the lead craftsman had signed the Hold Card Authorization form prior to authorizing the removal of the hold card and restoration of Breaker A-104 to the closed position. This resulted in a near-miss accident, since the electricians were working in 480v Bus B14 at the time it was reenergized.

This is a Severity Level IV violation (Supplement I) (Violation 50-313/9609-01).

- B. 10CFR50.71(e) states, in part, that "each person licensed to operate a nuclear power reactor shall update, periodically ... the Final Safety Analysis Report (FSAR) originally submitted as part of the application for the operating license to assure that the information included in the FSAR contains the latest material developed .... The updated FSAR shall be revised to include the effects of all changes made in the facility or procedures as described in the FSAR....".

Contrary to the above, the Unit 1 FSAR was not revised to incorporate the installation of fibrous insulation on Reactor Coolant Pumps A and B in October 1993.

This is a Severity Level IV violation (Supplement I) (Violation 50-313/9609-02).

Response to Notice Of Violation 313/9609-01

(1) Reason for the violation:

On January 13, 1997, a near-miss industrial accident occurred when a hold card was inappropriately removed from non-safety related 4160 volt breaker A-104 and 480 volt bus B14 reenergized while authorized bus maintenance was in progress. The *ANO Hold and Caution Card Control* procedure requires that the lead craftsman signoff prior to authorizing removal of the hold cards. Contrary to this procedural requirement, the Control Room Supervisor (CRS) authorized hold card removal without verifying that the lead craftsman had signed for the release of the hold cards.

Work was scheduled to remove and recalibrate breaker B-1415 on 480 volt load center B14. The CRS observed the lead craftsman discussing the tagout with the Shift Superintendent (S/S). At that time the CRS assumed that the craftsman was signing on to the hold card tagout. In reality the craftsman was inquiring about the hold card status for his job. Approximately one hour later, the craftsman returned and signed in on the hold card tagout. The CRS, seeing the lead craftsman and expecting the job to take approximately one hour, assumed he had completed the job activity and was releasing the hold card tagout. Without verifying the lead craftsman signature, the CRS authorized and directed the hold card to be removed and breaker A-104 reclosed.

Coincidentally, the electricians were unbolting breaker B-1415 from the bus bars on bus B14. When the first bus bar bolt had been removed from the breaker, an Auxiliary Operator (AO) arrived at B14 to take voltage readings. The arrival of the AO distracted the electricians so that they didn't immediately return to work on the bus bars. During this brief period, the control room closed breaker A-104 and reenergized the bus. The electricians noticed a humming sound at the transformer and observed that there was 500 volts indicated on the bus voltage meter and stopped work.

Two significant weaknesses were identified which contributed to this event: (1) the lack of communication between the CRS and S/S, and between the control room and the AO and (2) the lack of questioning by the AO and the electricians at bus B14.

When the CRS removed the tagging request from the Shift Superintendent's desk they both made assumptions, but there was no verbal interaction or questioning. The CRS assumed the lead craftsman had signed off the hold card and the S/S assumed that the CRS was taking the hold card authorization sheet to put it in the hold card book.

The AO was not aware of the maintenance activities planned for B14 and was not notified when the bus was taken out of service or when it was returned to service. When the AO observed the work in progress he did not question the electricians working on B14 to determine what they were doing even though he had just verified that the bus was energized. Also, the electricians working on the bus were puzzled by

the actions of the AO at the bus, but did not question the AO adequately to resolve their questions.

The root cause of this event was personnel error. The CRS failed to verify that the lead craftsman had signed for the release of the hold card prior to authorizing clearance of the hold card and closure of the breaker.

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

An Event Investigation Team was established to determine the root cause for the event and recommend corrective actions.

ANO-1&2 Operations Managers issued night orders to require a second verification that the lead craftsman release signature(s) has been obtained prior to release of a hold card.

The Plant Manager conducted all hands meetings to discuss the event and the potential consequences. This discussion stressed the need for attention-to-detail and a strong questioning attitude during this and similar evolutions.

The CRS was counseled and disciplined per the ANO disciplinary policy.

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

Procedure 1000.027, *Hold and Caution Card Control*, will be revised to require a second verification of the lead craftsman release signature prior to release of a hold card. This procedure revision will be completed by May 1, 1997.

An evaluation of the hold card process will be made to determine if additional controls are needed. This evaluation will be completed by May 1, 1997.

A review will be conducted of the hold card process to determine locations where the single failure of an individual to do his/her job correctly could result in injury. This review will be completed by May 1, 1997.

The appropriate department managers will discuss this event and related expectations with their personnel during continuing training by May 1, 1997.

The personnel involved in this event will review the event to assess what steps they might have taken to improve their own safety or that of others involved. The conclusions of these reviews will be discussed with the ANO-1 Plant Manager by June 30, 1997.

(4) Date when full compliance will be achieved:

Full compliance was achieved on January 13, 1997, when a new hold card was placed on breaker A-104 in accordance with procedure 1000.027, *Hold and Caution Card Control*.



Response to Notice Of Violation 313/9609-02

(1) Reason for the violation:

Limited Change Package (LCP) 92-5005 installed both fiberglass and reflective metal insulation on ANO-1 reactor coolant system (RCS) piping in the Spring of 1992. On March 16, 1992, Licensing Document Change Request (LDCR) 1-4.2-2 requested changes to the ANO-1 SAR to reflect the changes from metal reflective insulation to partial replacement with fiberglass insulation. SAR paragraph 4.4.1 was changed from "removable metal reflective insulation" to "removable insulation" and section 4.2.2.7 was changed to include the statement that "due to fire protection concerns, fiberglass insulation materials were not permitted on, adjacent to, or immediately below the reactor coolant pump (RCP) bowls."

Subsequently, LCP-92-5005A was issued on June 22, 1993, to replace reflective metal insulation with "thermal wrap" fiberglass blankets on the suction and discharge piping for RCPs P32A and B. This LCP included a Fire Protection Engineering review which concluded that the use of fiberglass insulation was acceptable in these locations. This review resulted in a full scale fire test in order to verify that the product complied with the NRC criteria for flame propagation and smoke spread.

Presently, there is no fiberglass insulation on the RCP bowls proper. LCP-92-5005 replaced the metal reflective insulation on the P32A and B bowls with new metal reflective insulation. The insulation on the suction piping below the pump bowls and on the discharge piping of P32A and B is fiberglass based, but its use was determined acceptable in LCP-92-5005A.

The SAR change initiated by LCP-92-5005 had not been incorporated in the SAR on June 11, 1993, when the evaluation for LCP-92-5005A was completed. The SAR update which included the LCP-92-5005 SAR change was submitted July 20, 1993. Implementation of LCP-92-5005A in the Fall of 1993 created a conflict between the actual plant configuration and the ANO-1 SAR statement in section 4.2.2.7.

The purpose of LCP-92-5005A was to install fiberglass based piping insulation which was inconsistent with the pre-LCP-92-5005 statement in section 4.4.1 which referred to metal reflective insulation. The 10CFR50.59 determination in LCP-92-5005A refers to the SAR changes made per LCP-92-5005; however, the reviewer did not realize that fiberglass insulation was in fact disallowed on this piping by the pending SAR statement in section 4.2.2.7. The root cause of the error in SAR section 4.2.2.7 is a misinterpretation of the pending SAR statement added per LCP-92-5005 and is therefore a work practice issue involving attention-to-detail and not a process deficiency.

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

A 10CFR50.59 Evaluation and LDCR was completed to correct SAR section 4.2.2.7 to reflect the actual plant configuration. This evaluation confirmed that the current plant configuration is acceptable.

A memo was sent to 10CFR50.59 reviewers stating the reviewer's responsibility to review "as built, as operating plant," including applicable pending SAR changes.

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

Enhancements to the Licensing Research System and 10CFR50.59 procedure will be evaluated and implemented as appropriate by August 1, 1997, to raise awareness of potential effects of pending SAR changes.

Enhancements to the Design Change Procedure to include an independent review for completeness of 10CFR50.59 reviews will be evaluated and implemented as appropriate by August 1, 1997.

(4) Date when full compliance will be achieved:

A 10CFR50.59 Evaluation and LDCR was completed to correct SAR section 4.2.2.7 to reflect the actual plant configuration. This evaluation confirmed that the existing plant configuration does not represent an unreviewed safety question. The pending SAR change will be included in the SAR update to be submitted following the next ANO-1 refueling outage.