



Entergy Operations

Entergy Operations, Inc.

Route 3 Box 137G
Russellville, AR 72801
Tel 501-964-3100

September 29, 1994

OCAN099407

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
50-313/94-06; 50-368/94-06

Gentlemen:

Pursuant to the provisions of 10CFR 2.201, attached is the response to the violations identified during the inspection of activities associated with: (1) failure to promptly identify drawing errors, (2) failure of a contracted chemistry technician to adhere to the requirements of a radiological work permit, (3) failure to prepare sufficient implementing procedures for the fire protection program.

In the cover letter to NRC Inspection Report 94-06, it was stated that Arkansas Nuclear One (ANO) staff indicated that "drawing discrepancies are not required to be identified in any formal tracking system." ANO wishes to correct this statement. It is the ANO management expectation that all drawing errors will be identified and tracked through an appropriate method of which there are several procedurally available. It is noteworthy that the Condition Reporting database lists 104 design configuration documentation deficiencies and since the Drawing Revision Notices method was implemented in 1992 there have been approximately 32,000 separate drawing enhancements or revisions formally identified. Nearly half of these drawing enhancements or revisions were originated independent of the modification process.

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

Very truly yours,

Dwight C. Mims,
Director, Licensing

DCM/ajg

Attachments

9410040288 940929
PDR ADDCK 05000313
Q PDR

cc: Mr. Leonard J. Callan
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

NRC Senior Resident Inspector
Arkansas Nuclear One
1448 S. R. 333
Russellville, AR 72801

Mr. George Kalman
NRR Project Manager Region IV/ANO-1 & 2
U. S. Nuclear Regulatory Commission
NRR Mail Stop 13-H-3
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

NOTICE OF VIOLATION

During an NRC inspection conducted on June 12 through July 23, 1994, three violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, one of the violations is listed below:

- A. 10 CFR Part 50, Appendix B, Criterion XVI, requires that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Quality Assurance Manual Operations requires that deficiencies be reported to responsible authorities for review and disposition in accordance with approved procedures. Cognizant supervisors are to review discrepancies and take appropriate action to resolve the discrepancies.

Procedure 1000.104, "Condition Reporting and Corrective Actions," defines a condition adverse to quality to include documentation errors and requires in Paragraph 6.1.1.C that such conditions be reported on a condition report form.

1. Contrary to the above, on November 9, 1990, the licensee knew that personnel had installed a solid plug in an atmospheric dump valve, rather than the balanced plug shown on the drawing. Licensee personnel did not identify the drawing error in a condition report until after the drawing error contributed to a reactor trip on April 11, 1994.
2. Contrary to the above, on March 18, 1994, the licensee knew that a fire suppression system test valve for Flow Switch FS-5630 had no unique identifier and was not included on the fire water system Piping and Instrumentation Drawing M-219. Licensee personnel did not identify the drawing errors in a condition report until after the NRC questioned the error on July 17, 1994.

This is a Severity Level IV violation (Supplement I) (313/9406-01).

A.1 Response to violation 313/9406-01

(1) Reason for the violation:

In early 1990 a Project Scoping Report was drafted to address leakage of Arkansas Nuclear One (ANO) Unit 1, Atmospheric Dump Valves (ADV). The scoping report recommended removal of the ADV bypass valves CVs 2668A and 2618A since they were not required for operation due to the suspected existence of balancing ports in the ADV plugs. During the development of the Design Change Package (DCP) to remove the valves it was unknown whether the ADVs had balanced or unbalanced ports; therefore, the special installations section of the DCP required inspection of the ADVs to determine the type of installed port. If balancing ports were not installed then removal of the ADV bypass valves would be unnecessary. The ADVs were inspected during ANO Unit 1 refueling outage 1R9 (10/1/90 - 1/6/91) and found to have unbalanced ports which allowed cancellation of the DCP. At this point a drawing discrepancy was not recognized.

For this instance, an inaccuracy between the field configuration and vendor drawings existed and a Condition Report (CR) should have been issued. Therefore, the reason a CR was not issued was inattention to detail on the part of the design engineer and modifications engineer who performed the inspection.

The lead individual assigned to the project was called to active military service and a contractor was assigned to perform the lead role. Due to these unique circumstances, ANO does not consider this condition to be representative of the design control process.

(2) Corrective steps taken and results achieved:

On April 12, 1994, a CR was issued to document the ADV failure to open following a reactor trip. Please note that the lack of a drawing revision upon plug modification in 1975 and inspection in 1990, is not the cause of the ADV failure to open following a reactor trip.

Vendor drawings to reflect the proper as-built condition of the ADVs were revised on September 29, 1994.

On September 26, 1994, a memorandum was issued to ANO personnel to reinforce management expectations that drawing discrepancies be promptly identified and tracked by the appropriate process, whether it meets the criteria of a significant condition adverse to quality or a minor drawing discrepancy.

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

Corrective actions have been completed and no further corrective actions are necessary.

(4) Date when full compliance will be achieved:

Full compliance was achieved on April 12, 1994, when a CR was issued to identify the ADV condition.

A.2 Response to violation 313/9406-01

(1) Reason for the violation:

During August 1993 while preparing a Plant Change to provide fire protection sprinkler coverage, a fire protection System Engineer noted that an inspectors test valve was not tagged or represented on the appropriate Piping and Instrument Diagram (P&ID) nor the vendor drawing. Consequently, during August 1993 this test valve was added to the vendor drawing and identified as an "inspectors test valve." However, the inspectors test valve was not assigned an identifying number nor added to the P&ID at that time.

The fire protection System Engineer has a performance objective to walk-down the regulatory required fire protection system by the end of 1994. The walk-down is designed to verify plant configuration and accuracy of plant drawings. Any discrepancies noted during this walk-down would be identified for resolution and correction at that time. Since the inspectors test valve was not being utilized the engineer planned to identify and correct the discrepancy during the fire protection system walk-down.

There are several approved programs and procedures implemented at ANO that provide methods and guidance for documenting drawing discrepancies and initiating corrective action. One method is to identify the drawing discrepancy per the requirements of Procedure 1000.104, *Condition Reporting and Corrective Actions*, Attachment A, *Guidelines for Identification of Conditions to be Reported* which states that a CR be issued for functional inaccuracies in safety-related documents, procedures, technical manuals, workplans, drawings, etc., which could degrade plant safety. However, the drawing discrepancy concerning the inspectors test valve did not impact the technical content of the drawing such that it degraded plant safety. ANO believes that the appropriate method of identification should have been per the requirements of Procedure 5010.020, *Drawing Revision Notices*, Attachment 1, *Guidelines for DRN Application* which states in part that, a Drawing Revision Notice (DRN) is required when a drawing discrepancy has been identified including: inconsistencies with actual plant configuration, inconsistencies with other controlled drawings, documents or databases, and errors or inconsistencies on the drawing itself. Therefore, the reason the violation occurred was that the engineer failed to realize that the drawing discrepancy should have been formally documented in a more expedient manner.

(2) Corrective steps taken and results achieved:

The fire protection System Engineer was counseled on September 27, 1994, and made aware of the requirement to promptly identify drawing discrepancies between the plant configuration and related documents.

On August 19, 1994, P&ID M-219 was revised to include the inspectors test valve which was designated as FS-170.

On September 26, 1994, a memorandum was issued to ANO personnel to reinforce management expectations that drawing discrepancies be promptly identified and tracked by the appropriate process, whether it meets the criteria of a significant condition adverse to quality or a minor drawing discrepancy. The September 26, 1994, memorandum was presented at the Plan of the Day (POD) meeting on September 27, 1994, to express management expectations to department managers and directors.

During the root cause investigation for this example of a violation (313/9406-01), it was noted that Procedure 5010.020, *Drawing Revision Notices*, did not specify that each drawing discrepancy should be evaluated to determine if the discrepancy meets the criteria of a CR. Procedure 5010.020 was changed to include this criteria on September 29, 1994.

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

A sample of ANO personnel will be surveyed to determine the level of awareness of the requirement to document drawing discrepancies and the processes available for identification. The survey results will be used to determine if additional corrective actions, e.g. training, are necessary. The survey will be completed by November 30, 1994.

(4) Date when full compliance will be achieved:

Full compliance was achieved when P&ID M-219 was revised on August 19, 1994.

Summary of Response to Notice of Violation (313/9406-01):

It is the ANO management expectation that any type of drawing discrepancy be identified and tracked via the appropriate identification document, whether it be a CR to identify a significant condition adverse to quality or other identification methods such as the DRN process to track a minor drawing error.

The CR database lists approximately 104 CRs that identify design configuration documentation deficiencies. Since the DRN process was implemented at ANO in March 1992 over 32,000 DRN numbers have been issued; 14,000 have been assigned to identify drawing deficiencies or drawing enhancements that are not related to modification packages. Therefore, since 1990 there have been configuration management program improvements and we believe that ANO has adequate programmatic controls to correct drawing discrepancies consistent with management expectations.

NOTICE OF VIOLATION

During an NRC inspection conducted on June 12 through July 23, 1994, three violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, one of the violations is listed below:

- B. Technical Specification 6.8.1.a states, in part, that written procedures shall be established, implemented, and maintained covering the activities referenced in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978.

Section 7.e.(1) of Appendix A to Regulatory Guide 1.33, Revision 2, February 1978, states, in part, instructions for limiting personnel exposure should be prepared for access control including the radiation work permit system.

Task, 1, Revision 6, "Anti-Contamination Requirements," of Radiation Work Permit 1994-0035 required anti-contamination gloves be worn when obtaining samples from the Duratek sample points in clean areas of the auxiliary building.

Contrary to the above, on July 1, 1994, the inspector observed a contractor chemistry technician obtaining samples from Duratek sample points in a clean area of the auxiliary building without wearing protective gloves.

This is a Severity Level IV violation (Supplement I) (368/9406-02).

B. Response to violation 368/9406-02

(1) Reason for the violation:

On July 1, 1994, a Diversified Technology (formerly Duratek) contract employee, assigned to the Chemistry department, was obtaining a liquid radioactive waste sample from the Diversified Technology sample points. The Radiological Work Permit (RWP) for the task required that the worker wear anti-contamination gloves when sampling at the Diversified Technology sample points in the clean areas of the auxiliary building. During the process of sampling, a NRC resident inspector observed that the worker was taking a liquid radioactive waste sample without the use of anti-contamination gloves. The NRC resident inspector questioned this practice and the worker stated that he was in a hurry to complete the sampling task and was aware of the RWP requirement.

Interviews with the worker revealed two important points: the perceived need to hurry to complete the task and the failure to comply with the RWP requirements. The worker stated that he was in a hurry to complete the sampling task; however, ANO's investigation into the root cause of this event found no extenuating instructions that would have induced a need to proceed quickly. The task being performed by the worker was routine and the processing of liquid radioactive waste did not require the worker to perform the job urgently. During the incident, sufficient storage volume was available to allow liquid radioactive waste processing to continue at a normal pace. The urgency of the task was not substantiated by the investigation. Additionally, the RWP for the task clearly required that anti-contamination gloves be worn during sampling from the Diversified Technology sample points in the clean areas of the auxiliary building. Anti-contamination gloves were conveniently available at the sample sink; however, the worker did not use the gloves.

The root cause for this event was the worker's failure to comply with the RWP task requirements. No condition or instructions existed that would have necessitated the need to perform the job task in any other manner than a normal evolution. The worker was familiar with the station programs and expectations regarding the performance of radiation worker practices. A contributing cause to the event may have been the routine nature of the task and the low radioactivity levels normally found in the liquid radioactive waste samples. This may have led the worker to inappropriately conclude that the use of the anti-contamination gloves were not necessary.

(2) Corrective steps taken and results achieved:

ANO's procedure compliance expectations and the severity of the event were communicated verbally with Diversified Technology workers on July 1, 1994, and with Diversified Technology management staff on July 5, 1994.

After interviewing the worker and discussions with the Diversified Technology management, the worker was removed from his job responsibilities on July 6, 1994, and his ANO site access was terminated on July 13, 1994. ANO believes that an urgency to

perform the task did not exist, and did not give the contracted worker reason to disregard the requirements.

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

ANO believes that this event does not represent the general attitude toward adherence to the radiological work standards that have been established at this site. Corrective steps to prevent further violations were completed when the Diversified Technology workers were made aware of ANO's expectations of complying with the established and approved procedures.

(4) Date when full compliance will be achieved:

Full compliance was achieved on July 1, 1994, when the Diversified Technology contract workers acknowledged their responsibilities when counseled on the severity of the procedural compliance issue and ANO's expectations.

NOTICE OF VIOLATION

During an NRC inspection conducted on June 12 through July 23, 1994, three violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, one of the violations is listed below:

- C. Unit 1 and 2 Technical Specification 6.8.1.f requires that written procedures shall be established covering the implementation of the fire protection program.

10 CFR 50.48 requires that nuclear plants licensed prior to 1979 satisfy the requirements of Appendix R with respect to features covered by Appendix R, except where features proposed have been accepted by the staff as satisfying the provisions of Appendix A to Branch Technical Position BTP APCS 9.5-1.

The Units 1 and 2 Safety Analysis Report state that the 1984 and 1985 Appendix R submittals were a part of the fire protection program.

Section II.A of 10 CFR Part 50, Appendix R, requires that a fire protection program establish the procedures required to implement the program at the site. Section II.A further requires that the fire protection program shall extend the concept of a "defense-in-depth" to fire protection in fire areas important to safety with the following objective: to detect rapidly, control, and extinguish promptly those fires that do occur.

Section II.C.7 of 10 CFR Part 50, Appendix R, requires that surveillance procedures be established to ensure that fire suppression systems and components are operable.

Appendix 9A of Units 1 and 2 Safety Analysis Reports states that the fire protection program at Arkansas Nuclear One is controlled and maintained by various plant procedures that include, but was not limited to implementing procedures, operational procedures, maintenance procedures, and surveillance procedures.

1. Contrary to the above, until June 9, 1994, the licensee had not prepared or performed a surveillance procedure to test the remote alarm function of Flow Switch FS-5630, which is associated with a fire suppression system that was relied upon to meet the 10 CFR Part 50, Appendix R, requirements.
2. Contrary to the above, as of July 22, 1994, the fire protection program described in the Units 1 and 2 Safety Analysis Reports and the implementing procedures did not clearly define the necessary compensatory actions for inoperable detector and suppression equipment installed to comply with 10 CFR Part 50, Appendix R, requirements.

This is a Severity Level IV violation (Supplement I) (313/9406-04; 368/9406-04).

Response to violation 313/9406-04; 368/9406-04

(1) Reason for the violation:

FS-5630 is a paddle type flow switch that provides an alarm annunciation for the sprinkler system protecting Fire Zone 149-E, Unit 1 auxiliary building hot instrument shop. The Fire Zone 149-E fire protection sprinkler system was installed in 1976 and is illustrated on P&ID M-219. The sprinkler system consists of a supply line fed off the fire water riser that contains: an isolation valve, check valve, flow switch and inspectors test valve. This particular configuration limits the method available to verify the operability of the flow switch FS-5630 to the use of the inspectors test valve.

On June 9, 1994, the fire protection wet-pipe sprinkler systems credited for 10 CFR part 50, Appendix R requirements were flow tested using the inspectors test valves. During the review of the test the fire protection System Engineer noted that Procedure 1104.032, Rev 41, PC-2, January 18, 1994, *Fire Protection Systems*, excluded the testing of FS-5630. Procedure 1104.032, Rev 41, PC-2, stated that testing of FS-5630 was "deleted until inspectors test valve installed." In contrast to the quoted statement, an inspectors test valve was identified as installed on the Fire Zone 149-E sprinkler system, and not depicted on P&ID M-219.

Procedure 1104.032, revision 32, March 7, 1989, identified flow switch FS-5630 was inspected by flowing water through the inspectors test valve. The next revision of Procedure 1104.032, revision 33, July 24, 1989, incorrectly deleted the requirement to test flow switch FS-5630. The statement that testing of FS-5630 was "deleted until inspectors test valve installed" was carried over into the subsequent revisions of Procedure 1104.032, although the sprinkler system was configured with an inspectors test valve. Documentation during the 1989 time period was reviewed and personnel involved in the revision 33 changes were interviewed to determine the root cause. Investigation into the reason for the root cause of deleting the FS-5630 testing was indeterminate.

The probable root cause of this condition was personnel error by the procedure writer and the fire protection reviewer who incorrectly deleted the requirement to test flow switch FS-5630 from Procedure 1104.032. This decision was based on the assumption that the sprinkler system for Fire Zone 149-E was not configured with an inspectors test valve. Additionally, the review process for this procedure revision failed to identify that this instrument would not be functionally tested by an alternate method. Both individuals failed to identify that eliminating the use of the inspectors test valve excluded the required testing for sprinkler system flow switch FS-5630 that protects Fire Zone 149-E.

(2) Corrective steps taken and results achieved:

On August 16, 1994, Procedure 1104.032 was revised to incorporate flow switch FS-5630 into the scope of the quarterly alarm test by utilizing the inspectors test valve.

On August 18, 1994, the Fire Protection personnel reviewed the root cause determination and discussed the responsibilities of the fire protection group during the procedure revision process.

On September 28, 1994, a plant walk-down was completed of the accessible Unit 1 & 2 regulatory required fire protection sprinkler systems to verify that the plant hardware valves are correctly illustrated on the documentation drawings.

The Unit 1 & 2 fire protection systems Procedures 1104.032 and 2104.032 were reviewed to verify that the regulatory required fire protection sprinkler systems are correctly surveillance tested to ensure operability. This corrective action was completed on September 28, 1994. The review resulted in identified discrepancies and Procedure Improvements Forms were issued to revise the procedures.

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

The Unit 1 & 2 containment building regulatory required sprinkler systems will be walked-down to verify that the plant hardware valves are correctly illustrated on the documentation drawings. This corrective step is scheduled to be completed following the end of each unit's next refueling outage, which is currently scheduled for 1995.

(4) Date when full compliance will be achieved:

Full compliance was achieved on August 16, 1994, when Procedure 1104.032 was revised to incorporate flow switch FS-5630 into the scope of the quarterly alarm test by utilizing the inspectors test valve.

C.2 Response to violation 313/9406-04; 368/9406-04

(1) Reason for the violation:

During February 1981 the U.S. Nuclear Regulatory Commission (NRC) issued 10 CFR 50, Appendix R and 10 CFR 50.48. These documents required that redundant safe shutdown equipment located within the same fire area be provided with a minimum level of fire protection that includes fire suppression and detection systems. ANO credited the existing technical specification fire protection systems and added fire protection systems, as necessary, to meet the Appendix R requirements. In accordance with Generic Letter 88-12 the technical specification fire protection systems were moved to the Updated Safety Analysis Report (USAR).

In October 1985 ANO considered the need for adding the Appendix R fire suppression and detection systems to both unit's technical specifications. This decision was delayed pending the ongoing development of Appendix R standardized technical specifications by the NRC and the industry fire protection group. The addition of the Appendix R required systems into the technical specifications would have provided the necessary compensatory actions. However, the standardized technical specifications were not issued. Following the 1985 ANO decision, actions needed to provide compensatory action guidance for the Appendix R required fire systems were not undertaken.

The root cause of this condition was the failure of ANO to track and develop compensatory actions for the Appendix R required systems when regulatory guidance was not subsequently issued. Both Unit 1 & 2 Operations departments were not provided with the necessary guidance to consistently apply compensatory actions to Appendix R fire suppression and detection systems.

While ANO believes that the compensatory procedures for the Appendix R required equipment is necessary and prudent, we believe that a clarification of the basis for the violation, as listed in the Notice of Violation 313/9406-04; 368/9406-04, is appropriate.

The Report of the Reassessment of the NRC Fire Protection Program attached to SECY 93-143 states:

The fire protection rule (10 CFR 50.48 and 10 CFR 50 Appendix R) was adopted primarily to force resolution of fire protection issues that remained unresolved following the staff's review of various fire protection programs that were being implemented by licensees. Section's III.G, III.J, III.L, and III.O of Appendix R were specifically backfit on all plants, and other sections of Appendix R were backfit only to the degree that unresolved issues existed following the staff's review.

The NRC staff issued Safety Evaluation Reports on the ANO-1 and ANO-2 Fire Protection Program's adherence to the guidance in Appendix A to Branch Technical Position (BTP) APCS 9.5-1 in 1978. No open items were identified that would backfit any other Section of 10 CFR part 50, Appendix R other than Sections III.G, III.J, III.L, and III.O. Therefore, ANO's 1984 and 1985 Appendix R submittals only pertained to compliance with the sections of Appendix R listed above, and the subsequent NRC staff review did not address compliance to Appendix A. Since only Sections III.G, III.J, III.L, and III.O were backfit onto ANO, the references to Sections II.A and II.C.7 included in the Notice of Violation 313/9406-04; 368/9406-04 are not believed to be applicable to ANO.

(2) Corrective steps taken and results achieved:

Engineering Programs identified the applicable fire detection and suppression systems being credited under Appendix R. A memorandum was issued to each Operations Manager on July 21, 1994, listing these systems. The memorandums stated that compensatory action measures for USAR required fire detection and suppression systems shall be applied to the Appendix R systems.

The Operation Managers issued night orders on July 22, 1994, informing the control rooms of the requirement to establish compensatory actions on the Appendix R required fire detection and suppression systems relative to the guidance contained in the July 21, 1994, Engineering Programs memorandums.

Engineering Programs July 21, 1994, memorandums were incorporated into Unit 1 & 2 fire protection system Procedures 1104.032 and 2104.032, Fire Protection Systems, by September 9, 1994. The controlled procedures provide for compensatory action measures for Appendix R required fire detection and suppression systems.

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

Enhanced fire protection procedures will be developed to incorporate a multiple number of fire protection procedures into a few core procedures as guidance for the regulatory required Unit 1 & 2 fire protection systems. The new procedures are scheduled for completion on March 30, 1995.

(4) Date when full compliance will be achieved:

Full compliance was achieved on September 9, 1994, when Unit 1 & 2 revised the fire protection procedures, which address the required compensatory action measures for regulatory required fire detection and suppression systems.