

10CFR2.201

July 28, 1997

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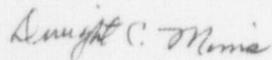
U. S. Nuclear Regulatory Commission
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Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6
Response to Inspection Report
50-313/97-13; 50-368/97-13

Gentlemen:

Pursuant to the provisions of 10CFR2.201, attached is the response to the notice of violation identified during the inspection activities associated with the Inservice Testing Program and the response to the notice of deviation identified during the inspection activities associated with commitments to perform radiographic and ultrasonic examinations.

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

Very truly yours,

Dwight C. Mims
Director, Nuclear Safety

DCM/RMC

Attachments

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NOTICE OF VIOLATION

During an NRC inspection conducted on May 12 through June 5, 1997, 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 50.55a(f) requires inservice tests to verify the operational readiness of pumps and valves, whose function is required for safety, to comply with the requirements set forth in Section XI of the appropriate edition and addenda of the ASME Boiler and Pressure Vessel Code.

Article IWV-1100 of the ASME Code provides the rules and requirements for inservice testing to assess operational readiness of certain ASME Code Class 1, 2, and 3, valves which are required to perform a specific function in shutting down a reactor to the cold shutdown condition or in mitigating the consequences of an accident.

Article IWV-3000 in Section XI of the ASME Code specifies the type of tests to be performed on each category of valve, and Subarticle IWV-3412(a) states that valves are to be exercised to the position required to fulfill their function (i.e., open or closed).

Contrary to the above, the following conditions were identified:

1. Seven Unit 2 ASME Code valves, which had a safety function to open and were required to be tested in accordance with Section XI of the ASME Code, were not included in the inservice test program. The normally closed Category B valves were located in the service water piping which provides makeup water to the spent fuel, and were identified as: 2FP-31; 2FP-46; 2SW-56, 2SW-57; 2SW-62; 2SW-67; and 2SW-138.
2. Eight ASME Code valves (six in Unit 1 and two in Unit 2) that were in the inservice test program, were not being tested or exercised to verify their ability to fulfill their closed safety function. The Unit 1 valves were identified as: BW-4A/4B (Borated Water Storage Tank Outlet Check Valves); CA-61/62 (Sodium Hydroxide Storage Tank Outlet Check Valves); and BW-2/3 (High Pressure Injection Pump Suction Check Valves). The Unit 2 valves were identified as: 2BS-1A/1B (Refueling Water Tank Outlet Check Valves).

This is a Severity Level IV violation (Supplement 1) (50-313;-368/9713-01).

NOTICE OF DEVIATION

During an NRC inspection conducted on May 12 through June 5, 1997, one deviation from a commitment was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Action," NUREG-1600, the deviation is listed below:

Arkansas Power & Light Co., letter ICAN048501, "HPI/Makeup Nozzle Component Cracking," dated April 22, 1985, submitted a final report titled, "B&W Owners Group Safe-End Task Force." The letter stated that Recommendation 3 in the report had been incorporated into the Arkansas Nuclear One Unit 1 inservice inspection plan.

Recommendation 3 addressed the following nozzle conditions and the associated nondestructive examination schedule:

Unrepaired nozzles were to be examined by radiography and ultrasonics during each of the next five refueling outages, then every fifth refueling outage thereafter,

Nozzles with the new sleeve design were to be similarly examined during the first, third, and fifth refueling outages, then every fifth refueling outage thereafter.

Nozzles that were re-rolled were to be examined by radiography during each of the next five refueling outages, then every fifth refueling outage thereafter.

Contrary to the above, 12 of the 14 committed radiographic and ultrasonic examinations scheduled for the 4 nozzles between Refueling Outage 5 and Refueling Outage 9 were not performed.

This is a Deviation (50-313/9713-02).

Response to Notice of Violation 50-313; 368/9713-01

(1) Reason for the violation:

On May 19, 1997, the inspector noted that the Unit 1 Borated Water Storage Tank (BWST) Outlet Check Valves BW-4A and BW-4B were included in the inservice test (IST) program; however, they were identified as having an open safety function only. These valves are the first isolation valves, of dual isolation valves, in paths from the emergency core cooling system (ECCS). Since these valves were not identified as having a closed safety function, they were not being tested in the closed position. ANO-2 check valves 2BS-1A and 2BS-1B, ANO-2 Refueling Water Tank (RWT) Outlet Check Valves were similarly identified.

In response, a condition report was initiated. The condition report noted that prior to 1993, IST testing of BW-4A and BW-4B consisted of valve disassembly and manually moving the valve disk to the open and closed position per approved relief requests. Additionally, four other ANO-1 valves were identified as not having a closed safety function, yet were considered to be part of a dual isolation configuration (CA-61, CA-62 - Sodium Hydroxide Tank Outlet Check Valves and BW-2, BW-3 - High Pressure Injection Pump Suction Check Valves). Another condition report action was initiated to determine if a similar condition existed on ANO-2. As a result of further review, seven additional ANO-2 ASME Code, safety-related, normally closed valves that have an open safety function, but were not in the IST program, were identified. The identified valves were 2FP-31, 2FP-46, 2SW-138, 2SW-56, 2SW-57, 2SW-62, and 2SW-67, all Category B valves in the service water piping which provide makeup water to the spent fuel pool.

These valves, except those providing service water make-up to the spent fuel pool, were previously identified for inclusion in the IST program. In the fall of 1996, an independent review of the ANO-1 and ANO-2 IST basis documents was performed. One of the observations made during the review was that ANO-1 valves, BW-2, BW-3, BW-4A, BW-4B, CA-61, and CA-62, had a closed safety function. A procedure improvement form was provided to ANO-1 Operations to inform them that the subject valves had a closed function and test procedures needed to be developed. Additionally, another observation from the review identified ANO-2 valves, 2BS-1A and 2BS-1B as having a closed function and discussions with ANO-2 Operations were ongoing.

The root cause of 2BS-1A, 2BS-1B, BW-2, BW-3, BW-4A, BW-4B, CA-61, and CA-62 not being reverse flow tested in the IST program was the failure to recognize the closed safety function that these valves perform, i.e., the second of two valves need to complete a closed system. The root cause of the seven ANO-2 service water valves not being within the IST program was not recognizing that these valves had a safety function that fell within the scope of the IST program. However, flow verification and preventive maintenance activities are performed on

the seven ANO-2 service water valves which has been considered to more adequately assess the valve's condition than manually stroking the valve quarterly.

(2) Corrective actions taken and results achieved:

Check valves BW-4A, BW-4B, 2BS-1A, and 2BS-1B were successfully tested to demonstrate their ability to close.

An operability assessment for valves CA-61, CA-62, BW-2, and BW-3 was performed and the valves were determined to be operable based on recent surveillance test information and periodic maintenance.

The ANO-2 service water valves, 2FP-31, 2FP-46, 2SW-138, 2SW-56, 2SW-57, 2SW-62, and 2SW-67, were tested successfully prior to heat-up from ANO-2 refueling outage 2R12.

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

Test procedures will be developed by September 30, 1997, to test the identified ANO-1&2 valves in accordance with the IST program.

A review of engineering standards HES-17, *ANO-1 IST Program Bases Document*, and HES-18, *ANO-2 IST Program Bases Document*, will be performed by December 1, 1997.

An assessment of the IST program for both units will be completed by December 1, 1997.

The IST program will be evaluated to determine the need for additional reviews by other departments of changes to the IST program. This action is scheduled to be completed by December 31, 1997.

(4) Date when full compliance will be achieved:

Full compliance was achieved on June 2, 1997, when the affected valves had been successfully tested or proven operable with an operability assessment.

Response to Notice of Deviation 50-313/9713-02

(1) Reason for the deviation:

In response to a concern that cracking could occur in the ANO-1 high pressure injection/makeup nozzles (HPI/MU), Arkansas Nuclear One (ANO) committed to perform augmented radiographic and ultrasonic examinations on these nozzles per Babcock and Wilcox (B&W) recommendations in 1985. The augmented examinations were included in the Inservice Inspection Program (ISI) and were scheduled for performance during five consecutive refueling outages (1R5 through 1R9) and then during each fifth refueling outage thereafter (1R14, 1R19, etc.). The radiographic testing was to ensure no gap existed between the thermal sleeve and the safe end and to detect nozzle degradation. The ultrasonic testing was to detect cracking of the safe end and the adjacent pipe.

The augmented examinations were performed during 1R5 (November 1982 - May 1983) and 1R6 (October 1984 - January 1985) and only partially completed during 1R7 (September 1986 - December 1986) due to program scheduling errors. The augmented radiographic examinations scheduled for 1R8 (October 1988 - December 1988) were cancelled due to ALARA concerns without first evaluating the NRC commitment to perform the examinations.

In September 1989, ANO self-identified the failure to perform the augmented examinations during 1R7 and 1R8 as previously committed to the Nuclear Regulatory Commission (NRC). An evaluation was performed to determine if the augmented examinations should be performed during a mid-cycle outage or to delay inspections until 1R9 scheduled for October 1990. The evaluation concluded that since the previous augmented examination results were satisfactory and since the nozzle thermal shields were visually inspected during 1R8 and found to be intact, the augmented examinations could be delayed until 1R9 (October 1990 - January 1991). The examinations performed during 1R9 were deemed satisfactory.

In response to the April 21, 1997, HPI nozzle leak at Oconee 2, ANO reviewed radiographs and ultrasonic examinations performed during 1R9 on the ANO-1 HPI/MU nozzles and determined that the anomaly (gap between the thermal sleeve and safe end) that caused the Oconee leak was not present in the ANO-1 nozzles. The examiners of the HPI/MU nozzle radiographs taken during past refueling outages did not document whether or not gaps existed between the thermal sleeve and the safe end area, even though the radiographs specifically depicted the thermal sleeve/safe end area.

Based on the 1997 evaluation of the past HPI/MU nozzle radiographs and ultrasonic examination test results ANO determined that additional augmented examinations were unnecessary and that the examinations could be performed on

the five refueling outage frequency as previously committed. The augmented examinations for the HPI/MU nozzles are currently scheduled to be performed during 1R14 (Spring 1998) and every fifth refueling outage thereafter.

Since 1989 when this deviation occurred, the ANO procedure revision process and the ANO commitment management program has undergone several enhancements. The current ANO procedure revision process requires that pending procedure changes that alter or delete existing regulatory commitments be resolved per the ANO commitment management program prior to implementing the change. The ANO commitment management program is currently based on the Nuclear Energy Institute's *Guidelines for Managing NRC Commitments*. Commitment changes or deletions are periodically reported to the NRC based on these guidelines.

(2) Corrective actions taken and results achieved:

The ANO-1 ISI Program was revised to include specific criteria for examination of the thermal sleeve to safe end area for gaps on the HPI/MU nozzles.

The ANO-1 ISI Program was reviewed to ensure that the required augmented examinations had been scheduled on the five refueling outage frequency.

(3) Actions taken to avoid further deviations:

Actions completed to date should avoid further deviations in this area.

(4) Date when corrective actions will be completed:

Corrective actions were completed on May 2, 1997, when the evaluation of the HPI/MU nozzle radiographs taken during 1R9 determined that there were no gaps in the thermal sleeve to safe end areas.