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U. S. Nuclear Regulatory Commission
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SUBJECT: Arkansas Nuclear One - Units 1 and 2
Docket Nos. 50-313/50-368
License Nos. DPR-51 and NPF-6
Response to Inspection Report
50-313/89-28; 50-368/89-28

Gentlemen:

Pursuant to the provisions of 10CFR2.201, a response to the violations identified in the subject inspection report is submitted.

Very truly yours,

E. C. Ewing
General Manager,
Technical Support
and Assessment

ECE:JDJ:sgw
attachment

cc: J. L. Milhoan, Director
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IE01
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Notice of Violation

A. 10CRF50, Appendix B, Criterion XVI, "Corrective Action," states, in part, "Measures shall be established to assure conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected."

Paragraph 16.2.2 of the Arkansas Power & Light Company's Assurance Manual for Operations requires that cognizant supervisors review discrepancies discovered during the course of the station operations and take appropriate action to resolve the discrepancies and evaluate their safety significance. Paragraph 16.2.2 also requires, for significant conditions adverse to safety, that action be initiated to identify the root causes and that necessary corrective action be taken to preclude repetition.

Contrary to the above, on June 28, 1989, the inspector found that the corrective action that had been assigned to prevent recurrence of level differences from reactor coolant system (RCS) level indicators had not been promptly completed. The corrective action which resulted from previous deviations of RCS level indication was assigned to be performed prior to the next RCS drain down. However, the corrective action was not performed until the second RCS drain down had been completed.

This is a Severity Level IV violation. (Supplement I)(368/8928-01)

Response to Violation 368/8928-01

(1) The reason for the violation if admitted:

AP&L does agree that the violation occurred. The required corrective action was not performed in a timely manner apparently due to a personnel error in the planning and scheduling of the job order. The corrective action assignment stated that the work was to be completed prior to the scheduled RCS drain down in refueling outage 2R7 (which is planned to begin in September 1989) or prior to unscheduled maintenance requiring RCS drain down. This action was issued in December 1988. When the job order was planned, the comment was attached that the job was to be performed before drain down of the RCS, and it was scheduled for 2R7 instead of being included in the forced outage list, which consisted of jobs to be performed during the next forced outage as necessary and feasible given the duration of the outage. Therefore, when ANO-2 shut down for an unscheduled outage in June 1989 (which required two RCS drain downs), this job was not scheduled to be worked.

A contributing factor was the lack of management oversight of the forced outage list. The list was developed based on input from the Shift Operations Supervisors but was not formally reviewed by upper level Operations management personnel.

(2) The corrective steps which have been taken and the results achieved:

The corrective action for the differences between the RCS level indicators was performed subsequent to the second RCS drain down. The expansion coils attached to the top of the pressurizer were verified to be correctly installed, the transmitter tubing was verified to have the proper slope, and the transmitter reference legs were checked for leaks. The tygon tubing was inspected to check for proper slope and to ensure that no kinks were in the tubing; the loop seal in the tygon tubing was found at this time. Draining the loop seal corrected the discrepancy between the two indications to within 10 inches.

(3) The corrective steps which will be taken to avoid further violations:

The primary responsibility for planning and scheduling outage work now resides with a Project Manager - Outages for each unit instead of the Nuclear Planning and Scheduling Department. This will ensure that outage-related work is planned and scheduled more effectively and appropriately.

The existing forced outage schedule for Unit 2 will be enhanced and expanded to provide more complete information to the Plant Manager, the Project Manager - Outages, and the Shift Operations Supervisors. The new forced outage schedule will be available in the Control Room for the Shift Operations Supervisor to reference when a forced outage occurs to ensure that work which is required to be performed will be done. The schedule will also include jobs which may be done dependent upon the duration of the outage. The first schedule for Unit 2 will be available one week following refueling outage 2R7. A similar outage schedule for Unit 1 was implemented August 11, 1989.

Nuclear Planning and Scheduling is currently investigating a method to flag job orders that are prerequisites to entering a plant/system/component condition.

(4) The date when full compliance will be achieved:

The corrective action was completed on July 5, 1989, and compliance was achieved at that time.

Additional Information

The inspection report identified other concerns related to this event and requested that the violation response also address these concerns.

(1) Address the adequacy of tracking corrective actions which are identified as prerequisites to plant evolutions.

The existing Condition Report (CR) system is designed to identify corrective actions which must be completed prior to heatup or criticality. The majority of corrective actions which are tied to a plant evolution are heatup restraints and are effectively tracked by the CR system. No formal tracking system for actions tied to other events currently exists.

The responsibility for ensuring that such an action is completed in a timely manner lies with the manager to whom the correction action has been assigned. Although a method of flagging job orders may be possible and is being investigated, the diversity of possible plant events which could have related required corrective actions complicates the development of an effective tracking method which would work for any given plant evolution. Each corrective action which is a prerequisite to some plant event other than heatup or criticality needs to be evaluated individually to determine the best method for ensuring its timely completion. In the case of the event which resulted in the violation, had the job order been included with the forced outage items, the work should have been completed as required. The revised forced outage schedule to be developed for Unit 2 will help prevent further occurrences of this type.

A review of the outstanding corrective actions associated with the CR system has been conducted for the purpose of identifying corrective actions which are prerequisites to key events other than heatup or criticality. No items were identified for Unit 2; however, the Unit 1 review identified seven items which were related to plant events other than heatup or criticality. A verification was performed which ensured that none of these items should have already been performed (i.e., these corrective actions have not been missed). Of the seven identified items, four involve procedure changes which will be needed prior to the next Unit 1 refueling outage and are not actually prerequisites to a plant event. The remaining three items involve work to be performed during an outage and are being appropriately incorporated into outage schedules.

Although the concern was expressed that the violation was indicative of a weakness in the CR system, AP&L is confident that the system is capable of performing its intended function and that corrective actions identified by the system are being tracked appropriately.

(2) Address the inspector observations regarding operations performed during the reactor coolant system drain down evolution.

The inspector noted four observations, summarized as follows:

a. The inspection of the tygon tubing performed prior to RCS drain down was either not properly performed or needed to be performed at a given interval to ensure proper condition of the tubing.

b. Draining continued below the level of 90 inches from the bottom of the RCS hot leg while a deviation of greater than 10 inches existed between the level indicators because the operators believed that the deviation was caused by an error in the remote indication.

c. Although the remote indication was conservative, operators used the tygon tubing for level indications.

d. Required additional procedural steps for draining below the "reduced inventory level" were not taken and the indicated level dropped to 2 inches below this point when the loop seal in the tygon tubing was removed.

AP&L agrees that the inspection of the tygon tubing was not properly performed in that the loop seal located inside the missile shielding was overlooked. A contributing factor to this error is the harsh environment which existed in the area during the walkdown (e.g., heat, use of self-contained breathing apparatus required). To alleviate this problem, the horizontal runs of tygon tubing inside the missile shields will be replaced with stainless steel tubing during 2R7. This will enable the operator to inspect the tygon tubing while staying outside the missile shields and will also drastically reduce the probability of loop seal formation.

This event will be discussed with the Unit 2 operators during the next requalification training cycle, which is scheduled to be completed September 15, 1989. The operators will also be instructed to be more conservative in choosing process instrumentation. Regarding this event, the applicable procedure will be changed by September 25, 1989, to require operators to use the more conservative indication for determining RCS inventory.

The procedure requires additional steps to be performed if the RCS level is to be drained below the reduced inventory level of 65 inches above the bottom of the RCS hot leg. These steps are primarily administrative precautions such as verifying steam generator levels (or pressurizer manway removed) and ensuring the availability of an alternate RCS makeup source and two RCS temperature indications. The additional steps were not performed as there was no intent to drain the RCS below the reduced inventory level. The use of the more conservative indication in the future should ensure that the required precautions are taken according to the procedure before the actual RCS inventory reaches the level requiring the additional steps. The procedure already requires that the more conservative indication must be used to maintain RCS level above 19 inches on the remote indication or 370 feet 8.5 inches on the tygon tubing to prevent vortexing at the shutdown cooling suction. Therefore, even if the RCS had been drained down to RCS hot leg midloop level (approximately 42 inches), the procedural requirements would have ensured the operability of shutdown cooling systems.

Notice of Violation

B. Unit 1 Technical Specification 3.21.1 states, "All penetration fire barriers protecting safety-related areas shall be intact at all times."

In addition, Unit 1 Technical Specification 3.21.2 states, in part, "With one or more of the required penetration fire barriers not intact, establish a continuous fire watch (or operable smoke and/or heat detection equipment with control room alarm) . . . ."

Contrary to the above, on June 8, 1989, the inspector found Fire Door 375 propped fully open. Compensatory measures had not been taken to establish a fire watch or operable smoke or heat detection equipment.

This is a Severity Level IV violation. (Supplement I)(313/8928-01)

Response to Violation 313/8928-01

(1) The reason for the violation if admitted:

AP&L agrees that the violation occurred, apparently due to a personnel error. Although initial training and annual retraining are conducted with site personnel on the requirement to maintain the integrity of fire barriers, an undetermined person or persons propped Fire Door 375 open.

(2) The corrective steps which have been taken and the resulted achieved:

Fire Door 375 was closed immediately upon investigation by Operations personnel, restoring the integrity of the fire barrier. A memorandum from the Director of Nuclear Operations was distributed to remind site personnel of the necessity to obey posted instructions and maintain fire barriers intact and fire doors closed at all times unless the requirements of the Technical Specifications are met for a fire barrier which is not intact.

(3) The corrective steps which will be taken to avoid further violation:

No further actions are considered to be necessary at this time.

(4) The date when full compliance will be achieved:

Full compliance was achieved June 8, 1989, within one hour of the identification of the violation when the door was closed.