NRC Form 366
(9-83)

U.S. Nuclear Regulatory Commission
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Arkansas Nuclear One, Unit One

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TITLE (4) Failure to Maintain Manually Operated Reactor Building Isolation Valve in Proper Position Due to Inadequate Administrative Controls

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)
0 2	0 9	8 8	8 8	0 0 5	0 0	0 5	0 6	8 8	N/A	0 5 0 0 0
									N/A	0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
POWER LEVEL (10) 0 8 0	__	20.402(b)	__	20.405(c)	__	50.73(a)(2)(iv)	__ 73.71(b)
	__	20.405(a)(1)(i)	__	50.36(c)(1)	__	50.73(a)(2)(v)	__ 73.71(c)
	__	20.405(a)(1)(ii)	__	50.36(c)(2)	__	50.73(a)(2)(vii)	__ Other (Specify in Abstract below and in Text, NRC Form 366A)
	__	20.405(a)(1)(iii)	X	50.73(a)(2)(i)	__	50.73(a)(2)(viii)(A)	
	__	20.405(a)(1)(iv)	__	50.73(a)(2)(ii)	__	50.73(a)(2)(viii)(B)	
	__	20.405(a)(1)(v)	__	50.73(a)(2)(iii)	__	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

Name	Telephone Number Area Code
Patrick C. Rogers, Nuclear Safety and Licensing Specialist	5 0 1 9 6 4 - 3 1 1 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

Cause	System	Component	Manufacturer	Reportable to NPRDS	Cause	System	Component	Manufacturer	Reportable to NPRDS

SUPPLEMENT REPORT EXPECTED (14)

__ Yes (If yes, complete Expected Submission Date) X No

EXPECTED SUBMISSION DATE (15): Month | Day | Year

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On 2/9/88 while performing a review of reactor building penetration design evaluations, it was discovered that the outside reactor building isolation valve (SS-146) for the once through steam generator (OTSG) secondary sampling system piping penetration was being maintained in an open position instead of closed as described in the Safety Analysis Report. The cause of this event was inadequate administrative controls for maintaining proper position of SS-146. Immediate corrective action was to close SS-146. The operations procedure used to verify equipment status once per shift was revised to include a check of the position of SS-146. The chemistry procedure for OTSG sampling was revised to include steps to request that operations personnel close the OTSG sampling system reactor building isolation valves after sampling is completed. The safety significance of leaving SS-146 open during operations is considered to be minimal. Motor operated reactor buildling isolation valves located in each OTSG sample lines inside the reactor building were being maintained closed except during sampling. Additionally, the steam generator sampling system is a closed system which is neither part of the RCS pressure boundary nor connected directly to the reactor building atmosphere. This event was determined to be reportable per 10CFR50.73(a)(2)(i)(B) on 4/6/88.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

I. Description of Event

A. Plant Status

At the time of discovery of the event, Arkansas Nuclear One, Unit One (ANO-1) was operating at 80 percent power with a reactor coolant system (RCS) temperature of 579 degrees Fahrenheit and an RCS pressure of 2155 psig.

B. Component Identification

No component failures were associated with this event. However, the component involved in this event was a 3/4 inch manually operated valve (SS-146) used as a reactor building isolation valve in the sampling system for the secondary side of the once through steam generators (OTSG). The EIIS identifier is KN-ISV.

C. Sequence of Events

As part of the followup actions performed in response to the discovery of design deficiencies associated with the installation of Target Rock solenoid valves used as reactor building isolation valves in ANO-1 (see LER 50-313/88-001), detailed evaluations of the design of reactor building piping penetrations were performed. On 2/9/88 while performing a review of these design evaluations, it was discovered that the outside reactor building isolation valve SS-146 for the OTSG secondary sampling system piping (penetration P-10) was being maintained in an open position instead of closed as described in the Safety Analysis Report (SAR). The valve was closed to restore the system alignment to the configuration specified in the SAR. Operations and chemistry personnel were informed of the requirement to maintain the valve in a closed position except during sampling operations. An investigation was initiated to determine the cause and reportability of the discrepancy.

II. Event Cause

A. Event Analysis

Sampling of the secondary side of the OTSG is required to determine the presence of radioactivity in the water as well as for water purity. Each OTSG is provided with a sample line for obtaining secondary side liquid samples for analysis. A motor operated isolation valve (MOV) is located in each OTSG sample line inside the reactor building. These isolation valves are equipped with remote position indications and can be remotely operated from the control room. Downstream of the inside reactor building isolation valves the sample lines merge to a single line which penetrates the reactor building through a common piping penetration (P-10). A single, manually operated isolation valve, SS-146, is located in the common sample line outside the reactor building. SS-146 is physically located in a piping penetration room located in the auxiliary building. The valve is equipped with remote position indication in the control room. From this point the sample line is routed through a sample cooler and miscellaneous valving and ends at the sample sink in the sampling room.

The ANO-1 SAR describes manual valve SS-146 and the inside sample line MOVs as being normally closed, infrequently used and administratively controlled to ensure they remain closed except for short periods of time when OTSG sampling is being performed. On 2/9/88, it was discovered that SS-146 was being continuously maintained in an open position. The inside reactor building isolation valve(s) and valves in the sample room were maintained closed and opened as necessary to collect an OTSG water sample for analysis.

The procedure used for OTSG sampling was reviewed, to determine the specified valve alignment for sampling. The valve alignment for obtaining a sample required that SS-146 and the appropriate inside isolation valve be in the open position while obtaining a sample. However, there were no procedural requirements to return these valves to the closed position after sampling. Through discussions with operations and chemistry personnel, it was determined that the inside reactor building isolation valve(s) and the valves in the sample room were closed to terminate the sample flow. It is believed that the practice of leaving valve SS-146 open contintuously, evolved because of convenience and radiation exposure reasons.

Since SS-146 is located in a piping penetration room, and can not be remotely operated from the control room or sample room, an operator would have to enter a radiation area and manually open SS-146 to initiate sampling the OTSG(s). Another entry into the area would then have to be made to close the valve after the samples were obtained. By maintaining SS-146 in an open position, a sample could be taken by opening the appropriate inside sample line MOV from the control room and opening of the valves in the sample room by the chemistry personnel.

A review of previous revisions of operations procedures indicated that SS-146 was required to be verified closed by the "Plant Preheatup and Precritical Checklist" procedure until 3/12/81. On that date a procedure change was made which deleted the requirement. Apparently, personnel initiating the procedure change were not aware of the SAR requirement that the valve should remain closed except for short periods of time during sampling operations.

The safety significance of leaving SS-146 open during operations is considered to be minimal. The inside reactor building isolation valves were being maintained in a closed position except during OTSG sampling. The steam generator sampling system is a closed system which is neither part of the RCS pressure boundary nor connected directly to the reactor building atmosphere. The sample lines are seismically designed and installed in accordance with accepted engineering and construction practices at the time of original construction of the plant.

B. Root Cause

The root cause of the event was inadequate administrative controls for maintaining sample valve SS-146 position. A contributing cause was an inadequate 10CFR50.59 review when the "Plant Preheatup and Precritical Checklist" procedure was changed to delete the requirement to verify the position of SS-146.

C. Reportability

The ANO-1 SAR indicates that SS-146 is a manual reactor building isolation valve that should be closed except during OTSG sampling. ANO-1 Technical Specification (TS) 3.6.5 states that prior to criticality following a refueling shutdown, a check shall be made to confirm that all manual reactor building isolation valves which should be closed are closed and locked, as required. No administrative controls were in effect to ensure the proper position of SS-146, and in practice SS-146 was being maintained in the open position. Consequently, it can not be shown that the provisions of TS 3.6.5 were met. As a result, this event is considered reportable under the provisions of 10CFR50.73(a)(2)(i)(B) as an operation prohibited by TS.

Following discovery of this event on 2/9/88, evaluations were necessary to determine the position requirements for SS-146 and the reportability of the event. On 4/6/88, the ANO Plant Safety Committee reviewed the results of these evaluations and determined that the event was reportable. The time required for the evaluations resulted in the time between the discovery date and the report date exceeding the 30 day time frame cited in 10CFR50.73.

III. Corrective Actions

A. Immediate

Upon discovery that SS-146 was open and no sampling was in progress, SS-146 was closed. Operations and chemistry personnel were informed that SS-146 should be maintained in the closed position except when sampling was in progress.

B. Subsequent

The operations "Shift Turnover Checklist" used to verify the status of certain plant equipment once each shift was revised to include verification that SS-146 and the OTSG sample line MOVs inside the reactor building are in their proper positions. This change became effective on 2/20/88. The chemistry procedure used for OTSG sampling was revised to include steps to request that operations personnel close the reactor building isolation valves for

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the OTSG after sampling is completed. These changes establish adequate administrative controls to ensure the TS requirement to check the position of SS-146 prior to criticality following a refueling outage is met and to maintain the valve closed except during OTSG sampling operations.

The current process used by AP&L for 10CFR50.59 reviews of procedures and procedure changes should prevent changes similar to the deletion of the requirement to verify that SS-146 was closed from the "Plant Preheatup and Precritical Checklist" procedure. In 1981, reviews in accordance with 10CFR50.59 could be made by anyone making a procedure change. Furthermore, no formal training or qualification was required. Currently, 10CFR50.59 reviews can only be made by certified reviewers. Certification of reviewers includes formalized training, testing and periodic recertification.

C. Future

No future corrective actions are required.

ARKANSAS POWER & LIGHT COMPANY

May 6, 1988

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U. S. Regulatory Commission
Document Control Desk
Washington, D.C. 20555

SUBJECT: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Licensee Event Report 50-313/88-005-00

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i), attached is the subject report concerning failure to maintain a manually operated reactor building isolation valve in the proper position due to inadequate administrative controls.

Very truly yours,

J. M. Levine (SMQ)

J. M. Levine
Executive Director
Nuclear Operations

JML:PCR:djm
attachment

cc w/att: Regional Administrator
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