



Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72801
Tel 501 858-5000

February 10, 2000

1CAN020002

U. S. Nuclear Regulatory Commission
Document Control Desk
Mail Station OP1-17
Washington, DC 20555

Subject: Arkansas Nuclear One - Unit - 1
Docket No. 50-313
License No. DPR-51
Licensee Event Report 50-313/2000-001-00

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i)(B), enclosed is the subject report concerning the failure to obtain a Reactor Building atmosphere sample.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Jimmy D. Vandergrift".

Jimmy D. Vandergrift
Director, Nuclear Safety Assurance

JDV/rhs

enclosure

JE22

U. S. NRC
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cc: Mr. Ellis W. Merschoff
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
P.O. Box 310
London, AR 72847

Institute of Nuclear Power Operations
700 Galleria Parkway
Atlanta, GA 30339-5957

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)
Arkansas Nuclear One - Unit 1

DOCKET NUMBER (2)
05000313

PAGE (3)
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TITLE (4) Reactor Building Atmosphere Sample Not Taken As Required By Technical Specifications Due To Personnel Errors During Review And Approval Of Maintenance Activity

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 NAME	DOCKET NUMBER
01	14	2000	2000	001	00	02	10	2000	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR: (Check one or more) (11)								
POWER LEVEL (10)	72.5	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		
		20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		Specify in		
		20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		Abstract Below		
		20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)		and in Text		

LICENSEE CONTACT FOR THIS LER (12)

NAME
Richard H. Scheide, Nuclear Safety and Licensing Specialist

TELEPHONE NUMBER (Include Area Code)
501-858-4618

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	X				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

Technical Specifications (TS) allow the unit to continue power operation for 72 hours with both the Reactor Building (RB) atmosphere particulate and gaseous detectors inoperable providing two other means of reactor coolant leak detection remain operable and RB atmosphere samples are taken and analyzed shiftly. Otherwise, the unit must be in Hot Shutdown within the following six hours. At approximately 1030 on January 13, 2000, both leak detection radiation monitors were taken out of service to facilitate maintenance on their associated RB isolation valves. The 72 hour TS action statement was entered at that time. At approximately 0830 on January 14, it was identified that the required sample was not taken on the previous shift. A six hour shutdown action statement was entered at that time and actions were initiated to take the sample. At 0918, acceptable sample results were verified and the six hour action was exited. The root cause of this event was personnel errors by several individuals involved in the planning and approval of the maintenance activity. Lessons learned training will be developed and provided to appropriate personnel.

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TEXT (if more space is required, use additional copies of NRC Form 366A) (17)

A. Plant Status

At the time this condition was discovered, Arkansas Nuclear One Unit 1 (ANO-1) was operating in steady-state conditions at approximately 72.5 percent power with three Reactor Coolant Pumps (RCPs) in operation. RCP P-32D was inoperable as a result of a failed anti-reverse rotation device.

B. Event Description

On January 14, 2000, it was identified that a shiftly Reactor Building (RB) [NH] air sample required by the Technical Specifications (TS) was not performed as required.

ANO-1 TS 3.1.6.7 states, "When the reactor is at power operation, three coolant leak detection systems of different operating principles shall be in operation. One of these systems is sensitive to radioactivity and consists of a radioactive gas detector and an air particulate activity detector. Both of these instruments may be out-of-service simultaneously for a period of no more than 72 hours provided two other means are available to detect leakage and reactor building air samples are taken and analyzed in the laboratory at least once per shift; otherwise, be in at least Hot Standby within the next 6 hours and in Cold Shutdown within the following 30 hours."

The three methods utilized to identify Reactor Coolant System (RCS) [AB] leakage include Reactor Building sump level indication, RCS inventory balance determination, and radiation monitoring.

The leak detection radiation monitoring system (RX-7460) [IJ] consists of an RB atmosphere particulate detector (RE-7460) and an RB atmosphere gaseous detector (RE-7461). The skid containing these monitors is located in the Auxiliary Building. Flow through the detector skid is drawn from the RB at a piping penetration shared with the Post Accident Sampling System (PASS) [IP]. This flowpath is automatically isolated during accident conditions by valves CV-7453 and SV-7454 which receive an Engineering Safeguards Actuation System (ESAS) [JE] signal to close. Radiation monitor sample return valves SV-7456 and SV-7479 also receive an ESAS signal to close.

On January 13, 2000, maintenance was scheduled to be performed on several solenoid valves associated with the RB radiation monitoring system and PASS. These valves included SV-7454 and SV-7456, the sample supply and return isolation valves for RX-7460, and SV-7510 and SV-7512, the PASS sample isolation valves. All four of these valves were scheduled to be worked on the same day since they share a common power supply.

Maintenance activities at ANO are controlled by the use of Maintenance Action Items (MAIs). During the preparation of MAIs, input from Operations personnel is utilized to determine the TS implications of the planned activity. This information is included in the MAI as part of the Impact Statement. The impact statement for the MAIs associated with RX-7460 and its associated

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valves correctly identified that the 72 hour action statement of TS 3.1.6.7 was applicable but failed to reference the contingency sampling requirement.

Procedure 1015.017, "Equipment Status and Control", provides controls to ensure that the impact of equipment removed from service for maintenance, modifications, testing, or failure is appropriately evaluated. This procedure states that the Shift Superintendent/Control Room Supervisor is responsible for verifying that TS, Technical Requirements Manual (TRM), and Fire Protection System Specifications Limiting Conditions for Operation are complied with as a result of equipment failures, maintenance, testing, or modifications. The procedure contains a form (Inoperable Equipment Checklist) which must be completed if the planned activity affects any TS, TRM, or Fire Protection System Requirements action statements. The form documents the formal evaluation of the impact of the planned activity on plant operation and is approved by the Shift Superintendent or Control Room Supervisor. It provides for documentation of applicable TS and action statements but does not specifically address contingency actions.

At approximately 1000 on January 13, Maintenance personnel requested Operations to tag out the valves in preparation for work. Licensed Operations personnel on duty in the Control Room Extension reviewed the MAIs, prepared the clearances for the equipment, and completed an Inoperable Equipment Checklist. The checklist documented that the unit would be in the 72 hour action statement of TS 3.1.6.7 but did not reference the contingency sampling requirement.

The Inoperable Equipment Checklist was then taken to the Control Room where it was reviewed and approved by the on-shift Control Room Supervisor. At approximately 1030 on January 13, Operations personnel removed RX-7460 from service to facilitate maintenance on the solenoid valves. The 72 hour action statement of TS 3.1.6.7 was entered at that time since the instrumentation associated with RB sump level and inventory balance determination was operable. Subsequently, power was removed from the valves causing them to fail closed, and the scheduled maintenance was commenced.

Work on the solenoid valves was completed on the evening shift of January 13. However, when RE-7460 was placed in service at approximately 0100 on January 14, a trouble alarm actuated which could not be cleared by the operators. The monitor remained inoperable pending repair. It was subsequently determined that the problem most likely resided in the monitor's heat trace circuitry and plans were made to have it repaired on the day shift.

On the morning of January 14, during preparation of the MAI for repair of RX-7460, the job planner requested that the Operations Shift Superintendent perform the TS review for the activity. At approximately 0830, the Shift Superintendent identified the contingency sampling requirement and verified that it had not been performed on the previous night shift, as required. The Shift Superintendent immediately entered the six hour shutdown action of TS 3.1.6.7 and directed Chemistry personnel to obtain the required sample. The sample was drawn and satisfactory analysis results were documented at 0918, at which time the six hour shutdown action statement of TS 3.1.6.7 was exited.

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The 72 hour action statement remained in effect until 1504 on January 14 when repairs were completed and RX-7460 was returned to service.

C. Root Cause

This event was the result of human errors made by several individuals during the preparation and implementation of the work activity. The three licensed operators involved in the critical steps in the process (MAI preparation, Inoperable Equipment Checklist preparation, and Checklist approval) stated that they recalled from memory that the applicable action statement timeclock was 72 hours; however, during their review of the TS in support of this activity, none of the individuals identified the contingency sampling requirement. Appropriate verification, self-checking, and peer checking was not accomplished.

A procedural inadequacy contributed to this event. The Inoperable Equipment Checklist required documentation of the applicable TS action statements and associated timeclocks but did not require documenting any required contingency actions. If this action had been included in the checklist, this event might have been precluded.

D. Corrective Actions

Upon identification that the sample had not been taken, the 6 hour shutdown action of TS 3.1.6.7 was entered at 0830 on January 14 and the required sample was taken and analyzed as required by the TS. The action statement was exited at 0918 on January 14 after verification of acceptable analysis results.

The Inoperable Equipment Checklist was revised to specifically document any contingency actions necessary to maintain TS compliance when equipment is removed from service.

A lessons learned training document pertaining to this event will be developed by February 29, 2000. The lessons learned training will be presented to the personnel of the applicable departments by July 31, 2000.

E. Safety Significance

This event involved the failure to complete a contingency action requiring an RB air sample be taken shiftly while RX-7460 was out of service. However, two other methods of identifying RCS leakage remained operable while RX-7460 was inoperable.

The required sample was subsequently taken and analyzed with acceptable results. Since this event involved personnel performance issues that did not impact the operability of plant equipment, it was of no safety significance.

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F. Basis for Reportability

Failure to obtain the TS required RB air sample shiftly while RX-7460 was out of service is reportable pursuant to 10CFR50.73(a)(2)(i)(B) as operation prohibited by the Technical Specifications.

G. Additional Information

There have been no Licensee Event Reports submitted by ANO since 1990 in which a contingency action or surveillance was missed as a result of the failure to verify required TS contingency actions for inoperable equipment.

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].