

December 19, 1996

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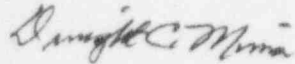
U. S. Nuclear Regulatory Commission
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Washington, DC 20555

Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Licensee Event Report 50-313/96-010-00

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i) enclosed is the subject report concerning inadequate testing of the Reactor Protection System.

Very truly yours,



Dwight C. Mims
Director, Nuclear Safety

DCM/dc

enclosure

DC 22
11

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

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) Inadequate Procedure Revision Resulted in Not Having Tested the Reactor Protection System High Temperature Trip Function as Required by Technical Specifications

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
11	19	96	96	010	00	12	19	96	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)		100	20.402(b)		20.405(c)		50.73(a)(2)(iv)		70.71(b)	
			20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		70.71(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

Dee Cantwell, Nuclear Safety and Licensing Specialist

TELEPHONE NUMBER (Include Area Code)

501-858-5589

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

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

On November 19, 1996, during a test of ANO-1 Reactor Protection System (RPS) Channel "D", it was discovered that a revision to the RPS test procedure failed to sufficiently incorporate a change to the variable low pressure curve, resulting in a failure to effectively verify operation of the high temperature bistable. Following a refueling outage, changes to the Core Operating Limits Report (COLR) resulted in a revision to the RPS calibration and test procedures. Individuals revising the procedures failed to recognize the effect these changes would have on subsequent testing of the high temperature trip bistable. A change to the variable low pressure curve allowed the variable low pressure bistable to actuate before the high temperature bistable, masking the ability of the individual performing the test to determine if actuation of the high temperature bistable resulted in a subsystem trip. Failure to effectively test the high temperature bistable created a condition prohibited by Technical Specifications. The RPS was declared inoperable and the 24 hour allowance provided by Technical Specification 4.0.3 was entered at 1445 on November 19, 1996. Appropriate RPS test procedures were revised to allow proper testing of the high temperature bistable. All four channels were satisfactorily tested in accordance with the corrected procedures. The action statement was exited at 1955.

NRC FORM 366A (5-92)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95	
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FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)	
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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 at 100 percent power in a steady state condition.

B. Event Description

On November 19, 1996, during the performance of the ANO-1 Reactor Protection System (RPS)[JC] monthly channel test, maintenance personnel discovered that the RPS test procedure failed to effectively verify operation of the high temperature bistable.

Reactor Coolant System (RCS)[AB] temperature and pressure are compared within the RPS to generate a variable low pressure trip setpoint within a specific range of operating parameters. Testing of RPS variable low pressure and high temperature trip responses is accomplished by inserting a test signal at the input of an instrument channel, varying this signal to a point that exceeds the setpoint of the trip variable, and ensuring that each is capable of actuating the reactor trip module. The variable low pressure and high temperature bistables actuate a common reactor trip module.

Following Refueling Outage 1R13, changes to the Core Operating Limits Report (COLR) resulted in a revision to the RPS calibration and test procedures affecting the power/imbalance/flow and variable low pressure setpoints. These changes were implemented on November 9, 1996. The change to the variable low pressure portion of the procedure moved the trip setpoint curve such that variable low pressure trip bistable actuation would occur at lower RCS temperatures than during the previous fuel cycle. No change to the signal input was required to properly test the variable low pressure bistable. However, to verify that actuation of the high temperature bistable results in a subsystem trip, the pressure input signal must be increased to a point where the variable low pressure bistable does not actuate before the high temperature bistable. The need to raise the RCS pressure signal in the portion of the procedure that tested high temperature bistable actuation was not recognized at the time of procedure revision.

The pressure input signal stipulated in the procedure allowed the variable low pressure bistable to actuate below the high temperature bistable setpoint of 618 degrees RCS temperature. Actuation of the variable low pressure bistable before the high temperature bistable masked the ability of the individuals performing the test to determine if actuation of the high temperature bistable would result in a subsystem trip.

Failure to adequately test the high temperature bistable created a condition prohibited by Technical Specifications. As a result, the RPS was declared inoperable and the 24 hour allowance provided by Technical Specification 4.0.3 was entered at 1445 on November 19, 1996. The action statement was exited at 1955 following procedural changes and successful completion of associated calibration testing.

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C. Root Cause

This condition resulted from a failure to correctly revise the RPS channel test procedure. The effect the setpoint change would have on other parts of the test procedure was not adequately evaluated. In addition, the scope of review was limited to only the changes associated with the portion of the procedure that tested the variable low pressure bistable. This resulted in a procedure change that prevented testing of the RPS channel high temperature bistable.

Subsequent to incorporating the changes to the variable low pressure curve, the monthly RPS channel test had been performed eight times (twice per channel). The technicians performing the surveillance on the high temperature bistable did not recognize the actuation of the variable low pressure bistable as an abnormal condition.

D. Corrective Actions

Appropriate RPS test procedures were revised to allow proper testing of the high temperature bistable. All four channels were satisfactorily tested in accordance with the corrected procedures. A review of RPS and Engineered Safeguards Actuation System [JE] test and calibration procedures did not identify other situations which would mask correct channel response.

This event will be reviewed with appropriate ANO-1 and ANO-2 personnel emphasizing the importance of complete and effective reviews of procedure changes. This action will be completed by March 31, 1997. In addition, this event will be reviewed with Instrumentation and Control technicians emphasizing the importance of the procedure reader also acting as a critical observer.

The RPS test and calibration procedures will be revised to incorporate an improved method for testing the bistable trip string by March 15, 1997.

Plants with a similar design will be informed of this occurrence by January 15, 1997.

E. Safety Significance

Upon successful completion of the monthly channel tests, the RPS was declared operable and the action statement associated with Technical Specification 4.0.3 was exited. Although the surveillance requirements were not performed within the required time interval, the satisfactory completion of the test verified that the RPS was operable. Therefore, the safety significance of this event is considered minimal.

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F. Basis for Reportability

The failure to perform a surveillance within the allowable interval specified in Technical Specifications is reportable pursuant to 10CFR50.73(a)(2)(i)(B) as an operation or condition prohibited by Technical Specifications.

G. Additional Information

Licensee Event Report (LER) 50-313/96-002-00, letter 1CAN049601 dated April 5, 1996, reported an incomplete surveillance of the RPS that resulted from a procedural deficiency. However the condition reported in that LER involved a long standing deficiency which existed since original procedure development. The condition discussed in this report was created as a result of an inadequate procedure revision.

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