James A. FitzPatrick
Nuclear Power Plant
P.O. Box 41
Lycoming, New York 13093
315 342-3840

New York Power Authority

William Fernandez II
Resident Manager

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JAFP-90-0281

United States Nuclear Regulatory Commission
Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

SUBJECT: DOCKET NO. 50-333
LICENSEE EVENT REPORT: 90-007-00
Procedure Deficiency Causes Part of Surveillance to be Missed

Dear Sir:

This Licensee Event Report is submitted in accordance with 10 CFR 50.73(a)(2)(i)(B).

Questions concerning this report may be addressed to Mr. Verne Childs at (315) 349-6071.

Very truly yours,

WILLIAM FERNANDEZ

WF:WVC:lar

Enclosure

cc: USNRC, Region I
USNRC Resident Inspector
INPO Records Center
American Nuclear Insurers

Cert No P100500614

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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
JAMES A. FITZPATRICK NUCLEAR POWER PLANT	0 5 0 0 0 3 3 3	1 OF 0 4

TITLE (4) Part of Instrument Functional Test for Main Steam Isolation Valve Position Switches was Incomplete due to Procedure Deficiency

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 3	0 2	9 0	9 0	— 0 0 7	— 0 0	0 4	0 2	9 0		0 5 0 0 0
										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)	1 0 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
W. VERNE CHILDS, SENIOR LICENSING ENGINEER	AREA CODE 3 1 5 — 3 4 9 — 6 0 7 1

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

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

EIIS Codes are in []

During normal full power operation at 1510 hours on 3/2/90 it was discovered that, due to a procedure deficiency, a portion of the Main Steam Isolation Valve (MSIV) [SB] position switch contacts were not shown to operate during MSIV partial closure. The switch contacts provide input to the Reactor Protection System [JC] to initiate a scram in the event of MSIV closure during operation in the "run" mode. The procedure was revised and completed by 1620 hours on 3/2/90.

The event was not safety significant because multiple undetected failures would be required and because the Final Safety Analysis Report specifically considered failure of MSIV closure to cause a reactor scram. Corrective action included revision of the procedure to correct the deficiency and review of other procedures to verify that the deficiency was an isolated event.

LER-89-008 is a related event involving a procedure deficiency that resulted in a missed surveillance.

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(9-83)

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Description of Event

During normal full power operation on March 2, 1990 while performing the monthly instrument function test surveillance procedure for Main Steam Isolation Valve (MSIV) [SB] position switches as required by Technical Specification Table 4.1-1, was found to contain deficiencies which resulted in incomplete surveillance of the valve position switches. The surveillance requires that each MSIV be partially closed (one valve at a time) to demonstrate that the valve position switches function. The functioning of the position switches is verified by visual observation of relays in the Reactor Protection System (RPS) [JC] and by observation of annunciators to verify that the partial valve closure (less than 90% open) has produced the expected trip of one division of the RPS trip logic.

As a result of review of surveillance procedures for preparation of training materials and discussions with Operations Department personnel, it was determined at 1510 hours that procedure steps did not require complete verification of the status of the RPS logic in response to partial closure of an MSIV. Detailed review of the logic and procedure revealed that only one of the two switch contacts for each of the valve position switches was actually shown to open when the associated valve was partially closed. The procedure was immediately changed to require verification of proper operation of all of the MSIV position switch contacts associated with the reactor protection system and the surveillance was completed at 1620 hours on March 2, 1990 using the corrected procedure.

Review of superceded earlier versions of the procedure reveal that the deficiency has existed since initial start-up of the plant.

Cause of Event

The incomplete surveillance was caused by a procedure deficiency. Prior to discovery of the deficient procedure, prerequisite steps and procedure performance steps properly verified the status of the trip logic by observation of valve position, relay status, and annunciator status. During the actual performance of the surveillance, only one of the two switch contacts which should change from "closed" to "open" when an MSIV is partially closed was shown to actually change position.

The incomplete surveillance testing due to the procedure deficiency is considered a Technical Specification violation requiring a report under 10 CFR 50.73(a)(2)(i)(B).

Analysis of Event

Each of the four main steam lines is provided with both an inboard (inside primary containment [NH]) and an outboard (outside primary containment) isolation valve. Each MSIV is provided with position switches for indication of fully closed, fully open, and partially closed valve position. The partially closed valve position switch contacts are part of the reactor protection system logic and are intended to initiate a reactor trip (scram) during operation in the "run" mode in response to the closure of any combination of inboard and/or outboard valves in three or more main steam lines.

Initiation of a reactor scram in response to MSIV closure during operation in the run mode is intended to minimize the reactor vessel pressure transient by initiating the scram prior to a significant steam flow reduction or reactor pressure increase due to MSIV closure.

The procedure deficiency is not considered to be safety significant for the following reasons:

1. Valve position switch contact failures would result in potentially unsafe input to the RPS logic only if the contacts failed in the closed position.

2. Valve position switch contact failures in the open position would have been detected during surveillance test prerequisite or "return to normal" steps.

3. The fault tolerance design of the RPS and valve position switch logic circuits would result in the expected initiation of a reactor scram even if one contact was failed in the closed position. At least two contact failures (or some combination of contact failure and another failure) would be necessary for the procedure deficiency to result in failure to initiate a reactor scram on MSIV closure.

4. Review of other surveillance procedures associated with MSIV position switches and other logic arrangements similar to the MSIV closure scram logic indicates that the procedure deficiency was an isolated event.

5. Generic component failure data contained in Reactor Safety Study WASH-1400, 1975 indicates that limit switch failure as a result of "failure to operate" is more than 3 orders of magnitude more common than a "short across a normal open or normal closed contact". From this data it can be concluded that the more common "failure to operate" type failures would have been detected by the deficient procedure because such failures would effect both contacts.

6. The accident analyses discussed in the Final Safety Analysis Report include evaluation of a failure to initiate a reactor scram upon MSIV closure. The transient is terminated by a high neutron flux (Average Power Range Monitor) [IG] scram which is a result of the collapse of moderator voids in response to the pressure increase.

Corrective Action

1. The procedure deficiency was corrected and the surveillance completed using the corrected procedure.

2. Review of other surveillance procedures associated with MSIV position switches, other valve position switches, and similar RPS logic was completed. One minor potential deficiency related to post-work testing following MSIV position switch calibration was noted and has been corrected.

Additional Information

Similar Events: Licensee Event Report (LER) 89-008 describes a similar event in which a procedure deficiency resulted in incomplete surveillance testing.

Component Failures: None