

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Palisades Nuclear Plant	DOCKET NUMBER (2) 0 5 0 0 0 2 5 5	PAGE (3) 1 OF 0 3
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TITLE (4)
Personnel Error Results in Inadvertent Auxiliary Feedwater System Actuation

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		
0 9	0 1	8 7	8 7	0 2	9	0 9	2 8	8 7	N/A		
									DOCKET NUMBER(S)		
									0 5 0 0 0		
									N/A		
									0 5 0 0 0		

OPERATING MODE (9) N

POWER LEVEL (10) 0 9 2

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

20.402(b)	<input type="checkbox"/>	20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	<input type="checkbox"/>	73.71(b)	<input type="checkbox"/>
20.405(a)(1)(i)	<input type="checkbox"/>	50.38(a)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	<input type="checkbox"/>	73.71(e)	<input type="checkbox"/>
20.405(a)(1)(ii)	<input type="checkbox"/>	50.38(a)(2)	<input type="checkbox"/>	50.73(a)(2)(vi)	<input type="checkbox"/>	OTHER (Specify in Abstract below and in Text, NRC Form 365A)	
20.405(a)(1)(iii)	<input type="checkbox"/>	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(vii)(A)	<input type="checkbox"/>		
20.405(a)(1)(iv)	<input type="checkbox"/>	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(vii)(B)	<input type="checkbox"/>		
20.405(a)(1)(v)	<input type="checkbox"/>	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(x)	<input type="checkbox"/>		

LICENSEE CONTACT FOR THIS LER (12)

NAME CSKozup, Technical Engineer, Palisades	TELEPHONE NUMBER
	AREA CODE 6 1 6 7 6 4 - 8 9 1 3

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
A									

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

Abstract

On September 1, 1987 at 1310 the Auxiliary Feedwater Actuation System (AFAS) was inadvertently actuated. This resulted in starting auxiliary feedwater pumps, P-8A and P-8C [SJ;P]. The actuation occurred during the performance of Technical Specification Surveillance Procedure MI-39, "Auxiliary Feedwater Actuation Logic Test". The reactor was critical with the Plant operating at 92 percent of rated power at the time of the event.

The Instrument and Control Technician performing MI-39 inadvertently pressed two steam generator signal channel sensors instead of a signal channel and actuation channel sensor. As the two signal channel sensors were pressed, AFAS was actuated and P-8A and P-8C started.

The feedwater pump actuations were acknowledged by Control Room operators who secured the feedwater pumps. The auxiliary feedwater pumps ran for approximately thirty seconds before being secured.

The surveillance procedure is being reviewed to determine if enhancements to the procedural steps can be made to more clearly define required actions. This event is also being reviewed by the Human Performance Evaluation System Coordinator.

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		87	029	00	02	OF	03

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

Description

On September 1, 1987 at 1310 the Auxiliary Feedwater Actuation System (AFAS) was inadvertently actuated. This resulted in starting auxiliary feedwater pumps, P-8A and P-8C [SJ;P]. The actuation occurred during the performance of Technical Specification Surveillance Procedure MI-39, "Auxiliary Feedwater Actuation Logic Test". The reactor was critical with the Plant operating at 92 percent of rated power at the time of the event.

The Auxiliary Feedwater Actuation System (AFAS) is designed to provide automatic auxiliary feedwater pump starting on low level in either steam generator. The system consists of four signal channels and two actuation channels. Each signal channel receives one level signal for each steam generator. This signal is compared to a setpoint and if the level signal drops below the setpoint, an alarm signal is sent to both actuation channels. The actuation channels work on a 2 out of 4 logic, that is a signal must be received from at least two different signal channels (for the same steam generator) to initiate an actuation signal. This signal starts the auxiliary feedwater P-8A, P-8C and P-8B sequentially.

When testing the system, only one signal or actuation channel is tested at a time. The logic testing is divided into two parts. First the logic for the signal channels is tested and then the actuation channels. The testing of the logic is done by utilizing a feature built into the system. For the system channels a low steam generator level signal is simulated and the system is checked to ensure it responds as expected. This test verifies that upon receipt of a low steam generator level that the logic module goes into the trip mode. At this time, the alarm indicating module is checked to verify it also functioned properly.

To test the actuation channels, the 2 out of 4 logic must be satisfied. To do this, one signal channel is tripped by the method described above and a test signal at the actuation channel logic module is inputted. These two signals satisfy the input logic and therefore, will allow the verification that the logic module goes into the trip mode, the alarm indicating modules are also verified for correct operation.

To avoid sending the actuation signal out to the pump start circuitry, a block feature is used. This feature blocks the actuation signal from starting the pumps. The design of the block feature is such that it will inhibit the signal only when the test feature on the logic module for the actuating channel is used to satisfy the 2 out of 4 logic. If two signals come from different signal channels, the block feature is not available and the system actuates the pump start circuit.

During the performance of MI-39 on September 1, 1987, the Instrument and Control technician performing the test inadvertently pressed two signal channel sensors instead of a signal channel and actuation channel

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

sensor. As the two signal channel sensors were pressed, AFAS was actuated and feedwater pumps P-8A and P-8C started.

The feedwater pump actuations were acknowledged by Control Room operators who secured the feedwater pumps. The auxiliary feedwater pumps ran for approximately thirty seconds before being secured.

Cause Of The Event

The actuation of auxiliary feedwater pumps P-8A and P-8C was the result of a personnel error. The Instrument and Control technician performing the surveillance test inadvertently pressed two low steam generator level signal sensors instead of a one signal sensor and one actuation channel sensor. By pressing the two signal sensors, the block feature was overridden and the feedwater pumps actuated.

Corrective Actions

Technical Specification Surveillance Procedure, MI-39 is being reviewed to determine if any enhancements to the procedural steps can be made to more clearly define required actions.

This event is being reviewed by the Human Performance Evaluation System Coordinator. Results and recommendations stemming from this review will be provided to Instrument and Control supervisor and if applicable, to other departments which may benefit from this experience.

Analysis Of The Event

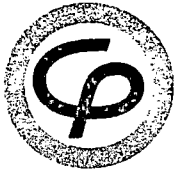
The actuation of the auxiliary feedwater system for approximately thirty seconds during this event resulted in approximately seventy-five gallons of feedwater being added to the secondary side. The addition of this volume is negligible with respect to secondary side inventory and not considered to be of safety significance.

Had the Control Room operators not recognized the feedwater pump actuations, the potential for excessive steam generator feeding would have been mitigated by the steam generator level control system. This system will control feedwater addition via the feedwater regulating valves by comparing the feedwater flow rate to each steam generator with the corresponding steam flow rate.

This event is being reported per 10CFR50.73 (a)(2)(iv) as an event that resulted in the automatic actuation of an engineered safety feature.

Additional Information

For additional information regarding an inadvertent auxiliary feedwater system actuation, reference Licensee Event Report 87-009.



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September 28, 1987

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
LICENSEE EVENT REPORT 87-029 - PERSONNEL ERROR RESULTS
IN INADVERTENT AUXILIARY FEEDWATER SYSTEM ACTUATION

Licensee Event Report (LER) 87-029, (Personnel Error Results in Inadvertent
Auxiliary Feedwater System Actuation) is attached. This event is reportable
to the NRC per 10CFR50.73(a)(2)(iv).

Brian D Johnson
Staff Licensing Engineer

CC Administrator, Region III, USNRC
NRC Resident Inspector - Palisades

Attachment

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