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April 23, 1990

Nuclear Regulatory Commission
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Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
LICENSEE EVENT REPORT 90-0003 - INADVERTENT AUXILIARY
FEEDWATER ACTUATION DURING LOGIC TESTING

Licensee Event Report (LER) 90-003 (Inadvertent Auxiliary Feedwater Actuation
During Logic Testing) 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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LICENSEE EVENT REPORT (LER)

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TITLE (4)
Inadvertent Auxiliary Feedwater Actuation During Logic Testing

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 3	2 2	9 0	9 0	0 0 3	0 0	0 4	2 3	9 0	N/A		
									DOCKET NUMBER(S)		
									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) 8 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input checked="" type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 80.36(a)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(a)						
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 80.36(a)(2)	<input type="checkbox"/> 80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 305A)						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.73(a)(2)(vii)(A)							
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(vii)(B)							
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(a)							

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME CSKozup, Technical Engineer, Palisades		AREA CODE 6 1 6	NUMBER 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 NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC
X	I/O	F/U	B 5 6 9	No						

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)		
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO		MONTH	DAY	YEAR

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

At 0911 hours on March 22, 1990 the Plant was operating at approximately 80 percent reactor power with the Primary Coolant System at approximately 556 degrees F and 2060 psia. While performing logic testing on the Auxiliary Feedwater Actuation System (AFAS), an inadvertent, automatic initiation of the AFAS was received and auxiliary feedwater pump P-8A started. The AFAS is an engineered safety feature (ESF).

This event was caused by a personnel error involving the Instrument & Control (I&C) technician who was performing the logic test and the operator who was independently verifying his actions. The error occurred when the trip signal that was inserted during the test was not reset prior to unblocking the AFAS logic trip module, as directed by procedure. This error was contributed to by a weakness in the test procedure. As corrective action, Surveillance Test Procedure MI-39 has been revised to more clearly state what trips and alarms must be reset prior to unblocking the AFAS logic trip module. Additionally, the root cause of this event and the need to perform step-by-step independent verification during surveillance testing will be reviewed with I&C technicians and operators. This event did not directly involve any failed systems or components, however, a blown fuse (Bussman, FNM-5) resulted in misoperation of an event recorder and a datalogger printer.

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

Description

At 0911 hours on March 22, 1990 the Plant was operating at approximately 80 percent reactor power, with the Primary Coolant System (PCS) [AB] at approximately 556 degrees F and 2060 psia. While performing logic testing on the Auxiliary Feedwater Actuation System (AFAS) [JE], an inadvertent, automatic initiation of the AFAS was received and auxiliary feedwater (AFW) pump P-8A [BA;P] started. The AFAS is an engineered safety feature (ESF) [JE].

The AFAS initiation was received during logic testing of the "A" AFAS actuation channel under Surveillance Test Procedure MI-39, "Auxiliary Feedwater Actuation System Logic Test". This procedure requires that the AFAS trip signal, sensor channel alarms and actuation channel alarms [ALM] must be reset and cleared prior to unblocking the logic trip module [RLY]. The inadvertent AFAS initiation resulted when the Instrument & Control (I&C) technician who was performing the logic test did not clear the AFAS trip signal which had been inserted during the test prior to unblocking the logic trip module for the "A" AFAS actuation channel.

Unblocking the logic trip module while an active AFAS trip signal existed completed the actuation system sequence. Following the AFAS initiation, AFW pump P-8A started and ran for approximately 21 minutes prior to being secured at 0932 hours. Normally, an AFAS initiation would have been annunciated in the Control Room [NA] and the AFW pump would have been secured more rapidly. However, the alarms and annunciators that would typically be received following an automatic AFAS initiation had already been received and acknowledged as an expected consequence of the AFAS logic testing sequence. As a result, the AFAS initiation did not result in any additional audible or annunciated indications in the Control Room.

Operators first became aware that AFW pump P-8A was running when it was noticed that Plant thermal megawatt output had decreased on the primary indication processor (PIP) [IO;PLOT]. Other than the PIP, the indications of AFW pump operation that were available to operators in the Control Room included AFW flow and AFW pump motor current. During the 21 minute period when operation of AFW pump P-8A went unrecognized, steam generator [SB;BLR] overfill was prevented by the steam generator level control program [JB]. Operator actions taken during this event were in accordance with procedures and reflected that they were adequately trained.

Required safety systems and components were available during this event and performed as designed. However, two instances of inadequate equipment performance were noted. Neither event recorder #3, point 3-18 [IQ;PLOT], nor the feedwater purity datalogger printers [IQ;PLOT] provided indication that AFW pump P-8A had started. An investigation performed after the event identified a blown fuse (Bussman, FNM-5) [FU] in a negative 125 VDC line that is common to both of these devices as the cause. Following replacement

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of the fuse, proper operation of event recorder #3 and the datalogger printer were verified by demonstrating that the devices provided correct indication of an AFW pump start.

During this event, the inoperative datalogger and event recorder points were identified when the AFW pump start was not recorded as expected following the AFAS initiation. In order to assure that conditions such as the blown fuse that was identified for this event do not go undetected for an extended period of time, proper operation of at least one data point on each event recorder is checked, when operating conditions permit, on a monthly basis.

Cause Of The Event

This event was caused by a personnel error involving the I&C technician (unlicensed, utility) who was performing the AFAS logic testing and the operator (licensed, utility) who was independently verifying his actions. The error occurred when the AFAS trip signal was not reset prior to unblocking the AFAS logic trip module, as directed by the test procedure, and was contributed to by a lack of specific guidance in the logic testing procedure.

This event did not involve an error in an approved procedure or an activity that was not covered by a procedure, nor was it contributed to by any unusual conditions of the workplace or any failed components or systems. Other than unavailability of event recorder #3 and the feedwater purity datalogger printers, the performance of Plant systems and components was as expected during the event.

Corrective Actions Taken

As corrective action, Surveillance Test Procedure MI-39 has been revised to more clearly state what trips and alarms must be reset prior to unblocking the AFAS logic trip module during AFAS logic testing. Additionally, the root cause of this event and the need to perform step-by-step independent verification during surveillance testing will be reviewed as a "lessons learned" topic with I&C technicians and operators. Completion of the "lessons learned" review is expected by August 1, 1990.

Analysis Of The Event

Actual Plant conditions during this event did not require the protective features associated with an AFAS initiation. However, even if actual Plant conditions had necessitated an AFAS initiation, Plant and operator actions taken in response to this event were as expected with no safety significant deviations or abnormalities. As a result, this event did not adversely

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impact the operational safety of the Plant or the safety of Plant personnel or the general public.

Additional Information

A previous event involving an inadvertent AFAS initiation due to a weakness in Surveillance Test Procedure MI-39 was reported in Licensee Event Report 89-029.