NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Palisades Nuclear Plant	0 5 0 0 0	1 OF 0 3

TITLE (4) Personnel Error During Preventive Maintenance Activity Results in Inadvertent engineered Safety Feature 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	DOCKET NUMBER(S)
									N/A	0 5 0 0 0
0 9	1 0	8 7	8 7	0 3 2	0 0	1 0	1 2	8 7	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)	0 9 3	20.402(b)	20.405(c)	X 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)	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
CSKozup, Technical Engineer, Palisades	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)		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)

Abstract

On September 10, 1987 at 0845, Low Pressure Safety Injection pump (LPSI), P-67B [BP;P], was inadvertently actuated during the performance of a preventive maintenance activity to clean the contacts of the Design Basis Accident (DBA) sequencer [JE;10]. The reactor was critical with the Plant operating at 93 percent of rated power when the event occurred.

As part of preventive maintenance activity, ESS-036, the tightness of the sequencer cam locking screw is physically verified. While verifying tightness, the screwdriver being used slipped off the head of the lockingscrew, causing the sequencer contacts which actuate P-67B to momentarily close. The LPSI pump was secured and maintenance activity suspended pending evaluation.

The locking screw tightness verification has been removed from preventive maintenance activity ESS-036 and placed in ESS-100. This later activity will allow tightness verification with sequencers contacts isolated. Current plans are to replace the existing rotating cam, mechanical sequencers with solid state programmable sequencers.

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Description

On September 10, 1987 at 0845, Low Pressure Safety Injection pump (LPSI), P-67B [BP;P], was inadvertently actuated during the performance of a preventive maintenance activity to clean the contacts of the Design Basis Accident (DBA) sequencer [JE;10]. The reactor was critical with the Plant operating at 93 percent of rated power when the event occurred.

The DBA sequencer consists of four separate rotating cams which, during accident conditions, automatically and sequentially initiate engineered safeguards controls. Preventive maintenance activity ESS-036, "Cleaning of Sequencer Contacts", is performed every three months and directs the cleaning of sequencer contacts and tightness verification of all wires, contacts and cam locking screws.

While verifying the tightness of the cam locking screw, the sequencer contacts which actuate P-67B, were momentarily closed when the electrical repairworker's screwdriver slipped off the cam locking screw. This resulted in the immediate actuation of P-67B. Upon discovery of the actuation, Control Room operators secured the LPSI pump and suspended completion of the preventive maintenance activity pending an evaluation.

At 1255, completion of the preventive maintenance activity was authorized in conjunction with a procedure change eliminating tightness verification of the cam locking screw. At 1305, the preventive maintenance activity was completed and all equipment declared operable.

Cause Of The Event

LPSI pump P-67B was inadvertently actuated when the DBA sequencer contacts, which automatically actuated P-67B, were momentarily closed during the performance of a preventive maintenance activity on the sequencer. The contacts were inadvertently closed when the screwdriver being used to verify tightness of the sequencer cam locking screw slipped off the head of the screw.

Prior to this inadvertent actuation, tightness verification of the cam locking screw had been successfully performed several times.

Corrective Action

Despite successful performance of this task several times prior to this event, the potential for an inadvertent actuation is present when activities of this nature are performed in and around an energized sequencer of this vintage. In that the potential for an inadvertent actuation cannot be removed when performing this task on an energized sequencer, cam locking screw tightness checks have been removed from this activity (ESS-036) and placed in one (ESS-100) which allows sequencer contacts to be insulated. Preventive maintenance activity ESS-100 requires cycling of the sequencer to verify operability and no mechanical binding.

Current plans are to replace the existing rotating cam, mechanical sequencers with solid state programmable sequencers.

Analysis Of The Event

The inadvertent actuation of P-67B during power operation imposes no affect on Plant safety as discharge flow would be recirculated to the Safety Injection Refueling Water (SIRW) tank. Flow to the primary coolant system is prohibited by system pressure and flow to the shutdown cooling heat exchangers is prohibited by closed/locked valves.

During power operation, LPSI pump operability is verified by performing surveillance procedures designed to determine pump run, flow, vibration, pressure and temperature. When this test is performed, LPSI pump P-67B is started from either the Control Room or local breaker. Suction is taken from the SIRW tank and discharge returned to the SIRW tank via the pumps minimum flow protection system. This flow path is like that encountered during the inadvertent LPSI pump actuation. Therefore, with the exception of the pump actuation mechanism, the effects on plant systems is identical and no safety hazard existed.

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

Additional Information

For information regarding a similar event, reference Licensee Event Report 86-016.

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October 12, 1987

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
LICENSEE EVENT REPORT 87-032 - PERSONNEL ERROR DURING PREVENTIVE MAINTENANCE ACTIVITY RESULTS IN INADVERTENT ENGINEERED SAFETY FEATURE ACTUATION

Licensee Event Report (LER) 87-032, (Personnel Error During Preventive Maintenance Activity Results in Inadvertent Engineered Safety Feature 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

OC1087-0185-NL02-NL04

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