



Consumers
Power

**POWERING
MICHIGAN'S PROGRESS**

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June 29, 1989

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
LICENSEE EVENT REPORT 89-010 - BREAKER FAILURE RESULTS IN TWO COINCIDENTLY
INOPERABLE SAFETY INJECTION COMPONENTS

Licensee Event Report (LER) 89-010 (Breaker Failure Results in Two
Coincidentally Inoperable Safety Injection Components) is attached. This event
is reportable to the NRC per 10CFR50.73(a)(2)(i).

Brian D Johnson
Staff Licensing Engineer

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

Attachment

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PDR ADDCK 05000255
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A CMS ENERGY COMPANY

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) PALISADES NUCLEAR PLANT	DOCKET NUMBER (2) 0 5 0 0 0 2 1 5 1	PAGE IS 1 OF 0 3
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TITLE (4)
BREAKER FAILURE RESULTS IN TWO COINCIDENTLY INOPERABLE SAFETY INJECTION COMPONENTS

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		
									N/A		
0	6	0 2 8 9	8 9	0 1 0	0 0	0	6	2 9 8 9	N/A		
									DOCKET NUMBER(S)		
									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 8 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 80.38(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"/> 80.38(a)(2)	<input type="checkbox"/> 80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 308A)						
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input checked="" 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)(viii)							

LICENSEE CONTACT FOR THIS LER (12)

NAME C S Kozup, Technical Engineer, Palisades	TELEPHONE NUMBER
	AREA CODE: 611 6 NUMBER: 716 4 1-1 81 9113

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
X	EB	52	A180	Yes					

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

Abstract

At 1845 on June 2, 1989 Operations personnel identified that high pressure safety injection (HPSI) pump P-66A [BQ;P] would not start on demand from the Control Room. P-66A was to be utilized to refill safety injection tank T-82A [BP;TK] after a draining and boron sampling evolution. At the time P-66A failed to start, T-82A was inoperable per level requirements specified in Plant Technical Specification (TS) 3.3.1.a. With both P-66A and T-82A inoperable, the Limiting Conditions of Operation for TS 3.3.2 were exceeded and the Plant entered TS 3.0.3. The reactor was critical with the Plant operating at 80 percent of rated power when the event occurred.

T-82A level was returned to its normal operating level by use of HPSI pump P-66B. When its level was restored, the Plant exited TS 3.0.3.

The failure of P-66A to start was due to a loose plunger assembly bolt on its associated switchgear breaker 152-207 [EB;52]. The plunger assembly bolt was loose due to a failed lock washer. This item is believed to be an isolated occurrence by both Consumers Power and the vendor.

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

Description

At 1845 on June 2, 1989 Operations personnel identified that high pressure safety injection (HPSI) pump P-66A [BQ;P] would not start on demand from the Control Room. P-66A was to be utilized to refill safety injection tank T-82A [BP;TK] after a draining and boron sampling evolution. At the time P-66A failed to start, T-82A was inoperable per level requirements specified in Plant Technical Specification (TS) 3.3.1.a. With both P-66A and T-82A inoperable, the Limiting Conditions of Operation for TS 3.3.2 were exceeded and the Plant entered TS 3.0.3. The reactor was critical with the Plant operating at 80 percent of rated power when the event occurred.

Directly following the discovery of HPSI pump P-66A being inoperable, Operations personnel initiated usage of HPSI pump P-66B to refill safety injection T-82A. At 1902 the low level condition in T-82A was corrected and the Plant exited TS 3.0.3. Plant shutdown was not initiated due to the availability of P-66B and the one hour Action Statement provided in TS 3.0.3. However, the Plant remained in a 24 hour Limiting Condition of Operation per TS 3.3.2.b due to the inoperability of P-66A.

Initial troubleshooting by Plant Electrical Maintenance personnel identified a problem within the 2400 volt breaker 152-207 [EB;52] associated with P-66A. As the problem had been isolated to the breaker and not the breaker cubicle, a spare breaker was installed. At 2312 HPSI pump P-66A was satisfactorily test started and subsequently declared operable. It should be noted that P-66A was utilized at approximately 1745 during sampling and filling operations for T-82B. No problems with P-66A were noted.

The four safety injection tanks are used to flood the core with borated water following a depressurization of the primary coolant system. The tanks are sized to insure that three of the four tanks will provide sufficient water to recover the core following a DBA. The tanks contain borated water at a minimum boron concentration of 1720 ppm. The tanks are pressurized with nitrogen at 200 psig which, together with the elevation head, assures that the core is protected. When the safety injection tanks are sampled a low level condition is created. In accordance with TS 3.3.2.a only one tank is sampled and hence declared inoperable at a time. To refill the tanks to their operating level, borated water is removed from the safety injection refueling water tank and pumped into the safety injection tanks via a HPSI pump.

Cause Of The Event

Switchgear breaker 152-207 began intermittent operation due to a loose assembly bolt in the main closing solenoid. Upon disassembly it was discovered that a lock washer on the plunger assembly bolt had failed to the point where the plunger assembly was not held securely. The shop supervisor

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

for Siemens Energy and Automation Service Center concurred with this root cause determination and indicated that this appeared to be an isolated failure which they had not experienced before. A review of Palisades Plant maintenance records also did not indicate any similar failures.

Corrective Actions

The failed breaker was replaced with a spare, satisfactorily tested and returned to the vendor for further evaluation, overall damage assessment and repair.

All 2400 and 4160 volt switchgear breakers are being refurbished as part of an overall breaker upgrade program. Permanent Maintenance Procedure SPS-E-4, "Breaker Inspection Procedure For 4160/2400 Volt Switchgear" will be revised to include a tightness check of the solenoid plunger bolt.

Analysis Of The Event

While both T-82A and P-66A were inoperable, the remaining three safety injection tanks were operable per TS 3.3.1. Additionally, HPSI pump P-66B was available for use. During the event, the Plant remained within TS 3.0.3 a total time of 17 minutes until T-82A was returned to service.

This event is being reported per 10CFR50.73(a)(2)(i)(B) as an operational condition prohibited by TS.

Additional Information

Switchgear breaker 152-207 is a model MA-250B breaker manufactured by Allis Chalmers Corporation.

LER 09010-1101