NRC FORM 366 (4/95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 4/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104, OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	Page (3)
PALISADES NUCLEAR PLANT	05000255	1 of 3

TITLE (4) LICENSEE EVENT REPORT 96-010 - TRIP OF HIGH PRESSURE SAFETY INJECTION PUMP WHILE FILLING SAFETY INJECTION TANK

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 NAME	DOCKET NUMBER 05000
07	17	96	96	- 010	- 00	08	16	96	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N
POWER LEVEL (10)	99.6

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

	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(I)		50.73(a)(2)(iii)
	20.2203(a)(1)		20.2203(a)(3)(I)		50.73(a)(2)(ii)		50.73(a)(2)(x)
	20.2203(a)(2)(I)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
	20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER
	20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A	
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Clayton M. Mathews	(616) 764-2035

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	ED	RLY	G080	Yes					

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES If yes, COMPLETE EXPECTED COMPLETION DATE	NO X				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On July 17, 1996, at 2114 hours, with the reactor at 99.6% power, the Safety Injection Tanks (SIT) were being sampled to verify boron concentration. While filling SIT T-82C with High Pressure Safety Injection (HPSI) Pump P-66A, P-66A tripped. Since T-82C was inoperable due to low pressure during the sampling evolution, Technical Specification (TS) 3.0.3 was immediately entered. Two minutes later, TS 3.0.3 was exited when nitrogen overpressure was restored. The 24-hour Limiting Condition of Operation (LCO) of TS 3.3.2.c was then entered for P-66A. The trip of P-66A was found to be due to its Y-phase time-overcurrent relay actuation.

Troubleshooting revealed that P-66A tripped due to its relay not properly resetting after each successive start. The start of P-66A for the fill of T-82C was sufficient to reach the overcurrent trip setpoint. Following checking and cleaning the P-66A motor, and checking the calibration of and exercising the relay, P-66A was test started three times. Proper relay reset was verified each time. P-66A was then declared operable, but degraded. On July 18, 1996, the LCO was exited. The relay was replaced on July 19, 1996, correcting the degraded condition of the breaker.

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

EVENT DESCRIPTION

On July 17, 1996, at 2114 hours, with the reactor at 99.6% power, Safety Injection Tanks (SIT) T-82 A, B, C and D were being sampled to verify boron concentration, in accordance with Technical Specification Table 4.2.1, Item 5. While filling SIT T-82C with High Pressure Safety Injection (HPSI) Pump P-66A in accordance with System Operating Procedure SOP 3, P-66A tripped approximately two seconds after having been started. Since T-82C was coincidentally inoperable due to low pressure as a result of the sampling evolution, Technical Specification (TS) 3.0.3 was immediately entered. TS 3.0.3 was exited approximately two minutes later when operators restored nitrogen overpressure to T-82C. The Limiting Condition of Operation (LCO) of Technical Specification 3.3.2.c was then entered for P-66A. Observation of the pump breaker 152-207 relays indicated that the trip of P-66A was due to Y-phase time-overcurrent relay actuation (ED;RLY).

Troubleshooting revealed that P-66A tripped due to relay 150/151Y-207 not properly resetting after each successive start of P-66A for SIT fill; i.e., the induction disc portion of the relay was not returning to its initial position. The third start of P-66A, for the fill of T-82C, was apparently sufficient for the induction disc to travel to its overcurrent trip setpoint. Thus, Y-phase time-overcurrent, in conjunction with the Y-phase high drop-out relay (which was picked up as a result of the P-66A start), then tripped breaker 152-207. A replacement GE overcurrent relay was not immediately available. Following checking and cleaning the P-66A motor, and checking the calibration of and exercising relay 150/151Y-207, P-66A was successfully test started three times. Proper relay reset was verified each time. P-66A was then declared operable, but degraded due to the suspect condition of relay 150/151Y-207). On July 18, 1996, at 1102 hours, the LCO of TS 3.3.2.c was exited. Relay 150/151Y-207 was replaced on July 19, 1996, correcting the degraded condition of breaker 152-207.

ROOT CAUSE

The apparent cause of the event was a faulty 150/151Y-207 time-overcurrent relay. Some type of minor mechanical interference (dust, grease, etc.) prevented its induction reset mechanism from returning to its initial position, resulting, ultimately, in the relay reaching its overcurrent trip point during the series of P-66A starts to refill the SITs. No definitive evidence of this was found during troubleshooting, with the exception that the faulty relay immediately reset when the breaker cubicle door was opened for troubleshooting. The one-time failure of relay 150/151Y-207 is considered random.

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SAFETY IMPLICATIONS

When P-66A tripped, it rendered one HPSI train inoperable and interrupted the refill of T-82C. Although T-82C was inoperable due to its pressure being outside of Technical Specifications limits during sampling, it is likely that its safety function could still have been performed. Even if it could not have performed its safety function, however, the Loss of Coolant Accident (LOCA) analysis assumes that only 3 of 4 SITs are available to inject their contents into the Primary Coolant System(PCS). Since T-82 A, B, and D were operable, the loss of T-82C would not have had any significant effect.

Since P-66A is the only pump allowed for filling SITs with PCS pressure greater than 1500 psia per SOP 3, no procedural method to restore the T-82C level was available. In this case, although T-82C level was low, it was still within the required Technical Specifications limits. Operability of T-82C was quickly restored by raising nitrogen pressure. If level had been outside the Technical Specification limits, however, the unavailability of P-66A would have delayed restoration significantly.

The use of P-66B to fill SITs via the Train 1 HPSI header under the same PCS conditions as permitted for P-66A appears to be a technically adequate alternative which should be incorporated into SOP 3.

CORRECTIVE ACTION

CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

All similar relays in a time-overcurrent application were inspected for potentially degraded conditions. No other potential-problem relays were found.

CORRECTIVE ACTION TO PREVENT RECURRENCE

1. Review the stock balance of spare motor protection relays for all safety-related motors. Procure necessary spare relays as considered appropriate by System Engineering.

2. Revise Standard Operating Procedure (SOP) 3 to permit the use of High Pressure Safety Injection (HPSI) Pump P-66B to fill Safety Injection Tanks at full Primary Coolant System pressure, if justified by engineering analysis.