

LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1) CONSUMERS ENERGY COMPANY - PALISADES NUCLEAR PLANT	DOCKET NUMBER (2) 05000255	PAGE (3) 1 OF 2
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TITLE (4)
LICENSEE EVENT REPORT 98-010, REACTOR TRIP DUE TO FAILURE OF THE MAIN FEEDWATER PUMP

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
07	21	98	98	010	0	08	18	1998		05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)										
POWER LEVEL (10) 99.6%	20.2201(b)			20.2203(a)(2)(v)			50.73(a)(2)(i)			50.73(a)(2)(viii)	
	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)			X 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 Dale Engle, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) (616) 764-2848

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	
B	SJ	CPLG	W318	Y						

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 15 single-spaced typewritten lines) (16)

On July 21, 1998, at 1452 hours, with the Plant operating at 99.6% power, the reactor was manually tripped due to a partial loss of main feedwater [SJ]. At the time of the reactor [RCT] trip one of the two main feedwater pumps [P] had tripped.

The Control Room received an oil system trouble alarm [AA] on the "A" main feedwater pump turbine driver, followed immediately by a trip of the main feedwater pump. In response to the trip of the main feedwater pump, the reactor was manually tripped in accordance with operating procedures. When the steam generator low level set point was reached, the auxiliary feedwater system [BA] actuated as expected.

The main feedwater pump trip was caused by failure of the coupling which drives the feedwater pump's main lube oil pump, resulting in a feedwater pump trip on low lubricating oil pressure.

The main lube oil pump coupling [CPLG] and associated components were replaced and satisfactorily tested in conjunction with returning the plant to operation.

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LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET(2)	LER NUMBER (6)			PAGE
CONSUMERS ENERGY COMPANY PALISADES NUCLEAR PLANT	05000255	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 2
		98	010	00	

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

EVENT DESCRIPTION

On July 21, 1998, at 1452 hours, with the Plant operating at 99.6% power, the reactor was manually tripped due to a partial loss of main feedwater. Prior to the reactor trip, both main feedwater pumps were operating in automatic mode providing feedwater to the steam generators. The Control Room received an oil system trouble alarm on the "A" main feedwater pump turbine driver, followed immediately by a trip of the main feedwater pump. In response to the trip of the main feedwater pump, the reactor was manually tripped in accordance with operating procedures. Subsequent to the reactor trip, the steam generator low level set point was reached, resulting in an actuation of the auxiliary feedwater system. All safety systems functioned as designed. This event resulted in both the manual actuation of the reactor protection system [JD] and the automatic actuation of the auxiliary feedwater system and is therefore reportable to the NRC in accordance with 10CFR50.73(a)(2)(iv) as an event that resulted in actuation of engineered safety features.

ANALYSIS AND CAUSE OF THE EVENT

The "A" main feedwater pump turbine driver was subsequently inspected to determine the cause for the pump trip. Upon disassembly and inspection, it was determined that the main feedwater pump trip was caused by failure of the coupling which drives the feedwater pump's main lube oil pump, resulting in a feedwater pump trip on low lubricating oil pressure. The coupling was noted to have exceeded its service life, having worn excessively at its mating surfaces, ultimately to the extent that it could no longer transmit torque from the drive shaft to the oil pump shaft. Contributing to coupling wear were worn drive shaft bearings, which allowed excess shaft play, and the coupling itself, which was not appropriately centered between the shafts.

Past periodic inspections of the main feedwater pump turbine driver internal components have been performed without detailed written instructions, resulting in the missed opportunity to identify and replace these components prior to failure.

SAFETY SIGNIFICANCE

This event had no safety significance. Applicable safety systems functioned as expected. The plant was stabilized and maintained in hot shutdown until the next day when it was returned to service.

CORRECTIVE ACTIONS

The main lube oil pump coupling and associated components were replaced and satisfactorily tested in conjunction with returning the plant to operation.

Detailed work instructions are being developed and implemented to support future periodic inspection activities on the main feedwater pump turbine driver internal components.