

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 1										DOCKET NUMBER (2) 0 5 0 0 0 2 0 6				PAGE (3) 1 OF 0 2		
TITLE (4) MAIN FEEDWATER PUMP FAILURE																
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)						
MONTH	DAY	YEAR	YEAR	SEQ. NUMBER	REV. NUMBER	MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)			
0 5	0 1	8 5	8 5	0 1 1	0 0	0 8	1 4	8 5					0 5 0 0 0			
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)														
1		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)		
POWER LEVEL (10)		20.405(a)(1)(i)				50.36(c)(1)				50.73(a)(2)(v)				73.71(c)		
9 3		20.405(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vii)				X 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)				INFORMATIONAL REPORT		
		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 H. E. MORGAN, STATION MANAGER										TELEPHONE NUMBER 7 1 4 4 9 2 - 7 7 0 0						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD						
F	FW	PUMP	B 5 8 0	Y												
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO				

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

On May 1, 1985, at 1301 with the unit at 93% power, a high temperature alarm was received from the West Main Feedwater Pump inboard motor bearing. A precautionary shutdown was initiated at 1326, and the unit entered Mode 3 at 1843.

When the pump was disassembled it was found that the shaft had fractured in a threaded region used to lock the thrust disc to the shaft.

There was no safety significance to this event because both pumps continued to operate satisfactorily. The unit returned to service on May 11, 1985 at 0048. The event is unrelated to any previously reported.

Laboratory analysis determined the failure to be due to cyclic fatigue, resulting from a long period of normal wear. Corrective action was taken to overhaul the pump, install a new shaft and impeller of an improved design and incorporate an allowance for thermal expansion in the pump alignment specification.

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LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQ. NUMBER	REV. NUMBER			
SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 1	0 5 0 0 0 2 0 6	8 5	- 0 1 1	- 0 0	0 2	OF	0 2

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

On May 1, 1985, at 1301 with the unit at 93% power, a high temperature alarm was received from the West Main Feedwater Pump (EIIIS Component Code SK) inboard motor bearing. A precautionary shutdown was initiated at 1326 to determine the cause of the alarm and to preclude the potential of damage to the pump. The pump was secured at 1356 and the unit entered Mode 3 at 1843.

When the pump was disassembled it was found that the shaft had fractured in a threaded region used to lock the thrust disc to the shaft, and adjoining the lubricating oil pump drive gear. The fracture resulted in axial motion of the shaft towards the motor, causing the high bearing temperature. No indication of the extent of the failure was observed during the pump operation, although the auxiliary oil pump had started and the thrust bearing deflector ring had shattered.

There was no safety significance to this event because both pumps continued to operate satisfactorily. The unit returned to service on May 11, 1985, at 0048.

Laboratory analysis determined the failure to have been caused by cyclic fatigue, which resulted from normal wear. It is possible that the lifetime of the shaft was reduced by vibration and low stress loading induced by a slight misalignment of the shaft or operation of the pump in a low flow mode for Technical Specification required surveillance testing. Previous Maintenance procedures did not include an extensive inspection of the shaft nor did the alignment procedure specify a tolerance for thermal expansion.

This is the first occurrence of this type of failure and is unrelated to previous LERs, including LER 85-004 which reported a failure of the East Main Feedwater Pump. However, as a result of LER 85-004, the rotating elements in the east pump were replaced with new components.

Corrective action was taken to overhaul the pump, repair and install a new rotating assembly. The components were designed to new specifications based on the manufacturer's recommendations to improve performance, reliability, and maintenance of the pumps. Also, as a result of this event, an allowance for thermal expansion is being included in the pump alignment specification and both pump shafts will be dye-penetrant inspected every other refueling cycle.

Southern California Edison Company

SAN ONOFRE NUCLEAR GENERATING STATION

P.O. BOX 128

SAN CLEMENTE, CALIFORNIA 92672

H. E. MORGAN
STATION MANAGER

August 14, 1985

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U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Subject: Docket No. 50-206
30-Day Report
Licensee Event Report No. 85-011
San Onofre Nuclear Generating Station, Unit 1

This submittal provides an informational Licensee Event Report (LER) for an occurrence involving the Main Feedwater System. Neither the health and safety of plant personnel nor the health and safety of the public was affected by this event.

If you require any additional information, please so advise.

Sincerely,

H. E. Morgan/mow

Enclosure: LER No. 85-011

cc: F. R. Huey (USNRC Senior Resident Inspector, Units 1, 2 and 3)

J. B. Martin (Regional Administrator, USNRC Region V)

Institute of Nuclear Power Operations (INPO)

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