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July 29, 1994

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

Subject: Docket No. 50-361
30-Day Report
Licensee Event Report No. 94-004
San Onofre Nuclear Generating Station, Unit 2

Pursuant to 10 CFR 50.73(d), this submittal provides the required 30-day written Licensee Event Report (LER) reporting a violation of the Technical Specifications that occurred when Edison unknowingly exceeded the time limits allowed to complete the action requirements of Technical Specification 3.7.10, "Emergency Chilled Water System." Neither the health nor safety of the plant personnel or the public was affected by this occurrence.

As reported in this LER, Edison had planned maintenance for HPSI pump P017 and for room cooler ME417 (the cooler for the room containing HPSI pump P017). The two other HPSI pumps and therefore both HPSI trains remained operable. When space cooler ME417 was removed from service, it was not recognized by the equipment planners that this cooler also provides the required emergency room cooling for Train A low pressure safety Injection pump and Train A Containment Spray pump. As a result, Edison unknowingly entered Technical Specification 3.7.10, "Emergency Chilled Water System" and did not comply with appropriate requirements.

Edison management is concerned that this occurrence may be indicative of a larger problem with our administrative review process as it involved cognitive errors by the equipment planners and by the control room operators, all highly trained and qualified individuals. Individuals who possess the skill required to properly evaluate the implications of plant maintenance on equipment operability. Additionally, two control room alarms were received when room cooler ME417 was removed from service which could have alerted the operators to the effect on Train A Low Pressure Safety Injection and Train A Containment Spray systems, thereby avoiding this event. However, the operators apparently took too narrow a view and did not recognize the significance of the alarms received for several shifts.

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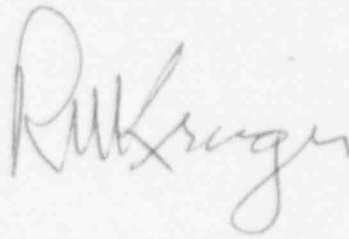
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Edison is conducting a broad evaluation to determine the cause(s) and implications of this event and identify long term corrective actions. As discussed with Dyle Acker (NRC Region IV, Walnut Creek Field Office) on July 25, 1994, this report was delayed to ensure that appropriate near term corrective actions were identified and to allow further management review of the issues involved. The attached LER will be supplemented when the long term corrective actions are identified.

Sincerely,



Enclosure: LER No. 94-004

cc: L. J. Callan, Regional Administrator, NRC Region IV
K. E. Perkins, Jr., Director, Walnut Creek Field Office, NRC Region IV
J. A. Sloan, NRC Senior Resident Inspector, San Onofre Units 2 & 3
M. B. Fields, NRC Project Manager, San Onofre Units 2 and 3
Institute of Nuclear Power Operations (INPO)

LICENSEE EVENT REPORT (LER)

Facility Name (1) SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2										Docket Number (2) 01510101316111 of 03				Page (3) 1 of 03		
Title (4) INOPERABLE EMERGENCY CHILLED WATER SYSTEM																
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)		
0	6	1	9	9	4	9	4	0	0	1	NONE					
OPERATING MODE (9)		1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)												
POWER LEVEL (10) 01918		20.402(b)		20.405(c)		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								
		20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		Abstract below and								
		20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)		in text)								
20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)												
LICENSEE CONTACT FOR THIS LER (12)																
Name R. W. Krieger, Vice President, Nuclear Generation										TELEPHONE NUMBER AREA CODE 7114 316181-6121515						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFAC-	REPORTABLE	CAUSE	SYSTEM	COMPONENT	MANUFAC-	REPORTABLE							
			TURER	TO NPRDS				TURER	TO NPRDS							
SUPPLEMENTAL REPORT EXPECTED (14)										Expected Submission Date (15)	Month	Day	Year			
X Yes (If yes, complete EXPECTED SUBMISSION DATE)										NO	0	9	3	0	9	4
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																

On June 19, 1994 at 1410, with Unit 2 at 98% power, Edison removed HPSI pump P017 from service for maintenance and declared the pump inoperable. The two other HPSI pumps, and thus both HPSI trains, remained operable. Maintenance was also planned for ECWS room cooler ME417 (the cooler for the room containing HPSI pump P017) and it was also declared inoperable. When equipment control planners scheduled the work for ME417, they failed to recognize that Technical Specification (TS) 3.7.10, "Emergency Chilled Water System" would be applicable. When ME417 was removed from service on June 19, 1994, the action statement for Technical Specification (TS) 3.7.10, should have been entered, but was not. On June 23, at 0730, when the control room supervisor identified that TS 3.7.10 should have been entered, the associated time limits of TS 3.7.10.b had been exceeded; Therefore, Edison is reporting this occurrence in accordance with 10CFR50.73(a)(2)(i).

Edison has not yet determined all the causes of this event. This event involved cognitive errors by the equipment planners and by the control room operators, all highly trained and qualified individuals who possess the skill required to properly evaluate the implications of plant maintenance on equipment operability. Therefore, Edison will conduct a broader evaluation to determine the cause(s) and implications of this event. Edison completed the TS 3.7.10.b required verifications at 0840 on June 23, 1994 and returned cooler ME417 to service at 1115 on June 23, 1994. Edison has counseled all individuals directly involved. Edison has reviewed this event with each operating crew and will provide additional crew training based on this event.

There was minimal direct safety significance to this event.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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Plant: San Onofre Nuclear Generating Station, Units 2
 Reactor Vendor: Combustion Engineering
 Event Date: June 19, 1994
 Mode: Mode 1, Power Operations
 Power: 98%

DESCRIPTION OF THE EVENT:

On June 19, 1994 at 1410, Edison removed HPSI pump [BQ,P] P017 from service for maintenance and declared the pump inoperable. The two other HPSI pumps, and thus both HPSI trains, remained operable. Maintenance was also planned for ECWS room cooler ME417 [KM,ACU] (the cooler for the room containing HPSI pump P017) and it was also declared inoperable.

When equipment control planners scheduled the work for ME417, they failed to recognize that Technical Specification (TS) 3.7.10, "Emergency Chilled Water System" would be applicable. TS 3.7.10 was applicable because ME417 also provides emergency room cooling for Train A low pressure safety injection (LPSI) pump [BP,P] and Train A containment spray (CS) pump [BE,P] as they are located in the same room. Therefore, when ME417 was removed from service on June 19, 1994, the plant conditions required complying with the provisions of TS 3.7.10 which was not done.

When one emergency chilled water system is inoperable, TS 3.7.10.a requires the inoperable system to be returned to service within 7 days or be in hot standby within the next 6 hours and cold shutdown within the following 30 hours. Additionally, TS 3.7.10.b requires that:

- 1) within 1 hour, verify that the normal HVAC system is providing cooling to vital power distribution rooms,
- 2) within 8 hours, verify the operability of the safe shutdown systems which do not depend on the inoperable cooler, and
- 3) within 24 hours, establish the operability of all required systems, subsystems, trains, components and devices that depend on the remaining operable emergency chilled water system.

On June 23, at 0730, when the control room supervisor identified that TS 3.7.10 should have been entered on June 19, 1994, the associated time limits of TS 3.7.10.b had been exceeded; Therefore, Edison is reporting this occurrence in accordance with 10CFR50.73(a)(2)(i).

Additionally, when room cooler ME417 was removed from service, two unexpected control room alarms were received associated with Train A Low Pressure Safety Injection (LPSI) and Train A Containment Spray (CS) systems. The control room operators investigated these alarms by reviewing the alarm electrical diagrams which confirmed that they should annunciate when the circuit breaker to Emergency Room Cooler ME417 is open. The control operators did not sufficiently pursue the significance of the alarms annunciating when the room cooler circuit breaker is open and therefore missed an opportunity to prevent this event. Two additional operating crews as well as the associated shift technical advisors (STA's) failed to adequately evaluate these control room alarms until the day shift control room supervisor did so on July 23, 1994.

CAUSE OF THE EVENT:

Edison has not yet determined all the causes of this event. This event involved cognitive errors by the equipment control planners [non-licensed, utility] and by the control room operators [licensed, utility], all highly trained and qualified individuals who possess the skill required to properly evaluate the implications of plant maintenance on equipment operability. Therefore, Edison will conduct a broader

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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evaluation to determine the cause(s) and implications of this event and will revise this LER by September 30, 1994 as appropriate.

IMMEDIATE CORRECTIVE ACTIONS:

When it was identified that TS 3.7.10 was applicable, the verifications required by TS 3.7.10.b were immediately commenced and efforts initiated to return the room cooler to service. Edison completed the TS 3.7.10.b required verifications at 0840 on June 23, 1994 through completion of surveillance SO23-3-3.47. Edison returned cooler ME417 to service at 1115 on June 23, 1994. Coincidentally, operators had completed surveillance SO23-3-3.47 on June 20, 1994 at 2050 to support unrelated evolutions. Even though this was not performed with the intent of satisfying TS 3.7.10 and was approximately 31 hours after removing cooler ME417, it demonstrated that the equipment required by TS 3.7.10.b was, and had been, operable.

Edison has counseled all individuals directly involved with the scheduling, review and approval of the work on ME417. All other equipment control personnel have been trained on this event by the supervisor directly involved with the error. Edison has reviewed this event with each operating crew and will provide additional crew training based on this event. This event will also be reviewed with all STA's.

Edison is conducting a broader evaluation to determine the cause(s) and implications of this event and will implement additional long term corrective actions, as identified, based on the results of the evaluation.

SAFETY SIGNIFICANCE OF THE EVENT:

There was minimal direct safety significance to this event. Although the verifications required by TS 3.7.10 were not completed within the times required by TS 3.7.10, the equipment required to be verified operable was, in fact, operable, as demonstrated by the surveillances completed on June 20, 1994 and June 23, 1994.

Additionally, cooler ME417 was returned to operable status within the 7 days allowed by TS 3.7.10.a. During the period that the Train A cooler ME417 was inoperable, the Train B emergency diesel generator EDG [EK] 2G003 was removed from service for 24 minutes to handbar the engine prior to a planned start. Prior to removing the EDG from service, an evaluation of Train A systems operability was performed by control room personnel. Because the HPSI work authorization record (WAR) was improperly evaluated, Train A ECWS was believed to be operable at the time the EDG was declared inoperable for hand barring. Even though the EDG was removed from service with the Train A ECWS inoperable, the EDG was returned to service well before the end of the two hours allowed by TS 3.8.1.1 action c.1 (to verify that the components dependent on the Train A EDG were operable).

Although Train A ECWS was technically inoperable, all ECWS components other than ME417 would have operated normally if an actuation signal occurred and would have provided cooling to all other Train A components. Normal HVAC in the room remained functional throughout the event.

ADDITIONAL INFORMATION:

There have been no previous LERs for similar events in the past three years.

A review of WARs did not identify any similar events on either Unit 2 Train B or Unit 3 Trains A or B. We have identified that, in 1992 a similar Unit 2 Train A WAR was prepared, however the work on the room cooler was deleted from the WAR prior to removing any equipment from service. We are investigating whether an over reliance on the previous WAR may have contributed to this event.