



SOUTHERN CALIFORNIA  
**EDISON**

An EDISON INTERNATIONAL Company

R. W. Krieger  
Vice President  
Nuclear Generation

September 25, 1996

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

Subject: Docket No. 50-361  
30 Day Report  
Licensee Event Report No. 96-006  
San Onofre Nuclear Generating Station, Unit 2

This submittal provides a written Licensee Event Report (LER) to report a condition not in conformance with Technical Specification SR 3.0.1. Neither the health nor the safety of plant personnel or the public was affected by this occurrence.

Sincerely,

Enclosure: LER No. 96-006

cc: L. J. Callan, Regional Administrator, NRC Region IV  
J. P. Dyer, Director of Reactor Safety, 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)

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LICENSEE EVENT REPORT (LER)																
Facility Name (1) SAN ONOFRE NUCLEAR GENERATING STATION (SONGS) UNIT 2										Docket Number (2) 0   5   0   0   0   3   6   1			Page (3) 1 of 0 4			
Title (4) VITAL BUS INVERTER, NON-CONFORMANCE WITH TS SR 3.0.1																
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	8	2	6	9	6	9	6	0	9	2	0   5   0   0   0   3   6   1		1   1   0   0   4			
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) 0   9   9			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 7   1   4   3   6   8   -   6   2   5   5						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFAC- TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC- TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC- TURER	REPORTABLE TO NPRDS		
SUPPLEMENTAL REPORT EXPECTED (14)										Expected Submission Date (15)		Month	Day	Year		
Yes (If yes, complete EXPECTED SUBMISSION DATE)										X NO						
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																

On 8/26/96, at about 0620, with the unit at about 99 percent power, an NRC inspector observed the local voltage meter for vital bus inverter Y003 indicating 122.5 vAC. Because a local placard listed the nominal output range as 118 to 122 vAC, the inspector notified the Control Room that Y003 was outside its posted range.

TS Surveillance Requirement (SR) 3.8.7.1 states: "Verify correct inverter voltage and alignment to required AC vital Buses" but does not define the "correct inverter voltage." The surveillance procedure also did not define the correct voltage. However, the operator rounds sheet (ORS) provided 118 to 122 vAC as the correct output voltage. Based on engineering judgment, Edison concluded the inverter and vital bus would still be capable of performing its intended safety function. Consequently, the plant operators did not declare Y003 inoperable.

TS SR 3.0.1 states: "Failure to meet a Surveillance...shall be failure to meet the Limiting Condition for Operation." Thus, plant operators should have declared Y003 inoperable and initiated the actions of TS 3.8.7. Because confirmation of actual inverter output voltage of 120.5 vAC was not completed until 1215 on 8/26/96 (about 4 hours beyond the TS allowed 2 hours), Edison is reporting this occurrence in accordance with 10CFR50.73(a)(2)(i).

This event occurred because Edison had revised the surveillance procedure on 8/5/96 and inappropriately removed the inverter voltages. Had the correct voltages remained in the procedure, operators would have declared the inverter inoperable when notified of the observed voltage indication. Edison has revised the applicable surveillance procedure to include the appropriate inverter output voltage band. This occurrence will be reviewed with all operating crews.

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Plant: San Onofre Nuclear Generating Station, Unit 2  
 Reactor Vendor: Combustion Engineering  
 Mode: Mode 1  
 Power: 99 percent  
 Event Date: August 26, 1996  
 Time: 0620

DESCRIPTION OF EVENT

On August 26, 1996, at about 0620, with the unit at about 99 percent power, the NRC senior resident inspector observed the local voltage meter for vital bus inverter [EF,INVT] Y003 indicating 122.5 vAC. Because a placard on the inverter listed the nominal output range as 118 to 122 vAC, the inspector notified the Control Room Supervisor [Utility, Licensed] that the inverter voltage was outside its posted range. An operator was sent to verify the reading, noting the indication was just above 122 vAC (a more precise reading is not possible as the scale divisions provided on the analog meter are in 2 vAC intervals - See attached photograph).

Local equipment placards typically provide nominal parameter values rather than operability limits and plant operators reviewed the Technical Specifications (TS) to determine the allowed limits. TS Surveillance Requirement (SR) 3.8.7.1 states: "Verify correct inverter voltage and alignment to required AC vital Buses" but does not define the "correct inverter voltage." The procedure used to complete this surveillance also did not define the correct inverter voltages. However, the operator rounds sheet (ORS) provided 118 to 122 vAC as the correct inverter output voltage and the Updated Final Safety Analysis Report (UFSAR) indicated 120 vAC +/- 2 percent (117.6 to 122.4) as the rated inverter output voltage.

Following a request from shift personnel, the Electrical Engineering group concluded, based on engineering judgment, that the inverter and vital bus would be capable of performing its intended safety function with an indicated output voltage of 122.5 vAC. Consequently, the plant operators did not declare the inverter inoperable nor initiate the actions of TS 3.8.7.

TS SR 3.0.1 states: "Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the Limiting Condition for Operation (LCO)." Therefore, when notified of the incorrect inverter voltages, the plant operators [Utility, Licensed] should have declared inverter Y003 inoperable pending either: (1) confirmation by qualified test equipment measurement that the actual inverter output was correct (between 118 to 122 vAC), (2) official revision of plant documentation to expand acceptable output range, if possible, or (3) adjustment of the output voltage, as needed. Because confirmation of actual inverter output voltage of 120.5 vAC was not completed until 1215 on 8/26/96 (about 4 hours beyond the TS allowed 2 hours), Edison is reporting this occurrence in accordance with 10CFR50.73(a)(2)(i).

CAUSE OF THE EVENT

This event occurred because Edison did not provide quantitative operability information in the inverter surveillance procedure. Typically, values contained in ORSs are not used to establish equipment operability limits, but rather to alert operators to equipment which may require additional evaluation.

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In contrast, plant surveillance procedures contain operability limits for TS surveillances. However, on August 5, 1996, Edison revised procedure SO23-3-3.27.2, and inappropriately removed the TS required inverter voltages from that procedure (cognitive personnel error; utility Licensed). Had the correct voltage information remained in the procedure, operators would have considered the voltage information to be inverter operability limits and would have declared the inverter inoperable when notified of the observed voltage indication.

#### CORRECTIVE ACTIONS

Inverter W003 was verified to be operable by measuring its output voltage with a digital multimeter and confirming output voltage was within the 118 to 122 vAC band. Edison has revised the applicable surveillance procedure to include the appropriate inverter output voltage band.

This occurrence will be reviewed with all operating crews. Further, pending resolution of the meter accuracy issue discussed in the additional information section below, the weekly surveillance will be conducted with a digital multimeter.

#### SAFETY SIGNIFICANCE

Because the inverter voltage remained within the 118 to 122 vAC acceptance band and was, in fact, operable throughout this occurrence, there was no safety significance to this event.

#### ADDITIONAL INFORMATION

Edison is not aware of any other cases where TS SR acceptance criteria is only located in an ORS. However, there are other instances where procedural guidance for TS required surveillances does not clearly define satisfactory and unsatisfactory surveillance results. For example, TS SR 3.8.9.1 states, "Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems." The procedure used to complete this surveillance provides a voltage band, and instructs operators NOT to declare a component inoperable if it is found outside this stated band, but directing operators instead to request Engineering to complete an operability evaluation.

Edison will complete a review of the TS SRs and their associated procedures and revise them as necessary to ensure surveillance acceptance criteria are clearly stated.

One additional issue was identified as a result of this occurrence. The UFSAR stated output voltage for the inverter is 120 vAC +/- 2 percent (+/- 2.4 volts). The meter provided by the inverter vendor and used for recording output voltage has a stated accuracy of +/- 2 percent of full scale indication (150 vAC), or +/- 3 volts. While Edison has concluded that this meter would not impede inverter operability determinations (i.e., the inverter would remain operable with a meter indicated output voltage of 118 to 122 vAC), Edison is continuing our investigation of this issue.

Edison has not reported any other occurrences of inappropriate response to a component with measured parameters outside its TS surveillance band in the last 3 years.

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