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EDISON

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Dwight E. Nunn
Vice President

June 20, 1997

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

Subject: Docket Nos. 50-361 and 50-362
Reply to a Notice of Violation
San Onofre Nuclear Generating Station, Units 2 and 3

Reference: Letter, Mr. A. T. Howell III (USNRC) to Mr. Harold B. RAY (Edison),
dated May 23, 1997

The referenced letter transmitted the results of NRC Inspection Report No. 50-361/97-08 and 50-362/97-08, conducted April 21-25, 1997, at the San Onofre Nuclear Generating Station, Units 2 and 3. The enclosure to the referenced letter contained a Notice of Violation (9708-01), involving the failure to monitor in-process welding parameters. The enclosure to this letter provides Edison's reply to the Notice of Violation.

As noted in the reference, the welding procedure specification requirement to adhere to heat input limits was not implemented by appropriate guidance (i.e., measuring, monitoring, or training). Work organizations believed that if they followed their normal welding practices, they would have been below the heat input limit. Edison has implemented interim heat input monitoring, and will evaluate further weld program enhancements.

If you have any further questions, please contact me.

Sincerely,

Enclosure: Attached

cc: E. W. Merschoff, Regional Administrator, NRC Region IV
A. T. Howell, Director, Division of Reactor Safety, NRC Region IV
K. E. Perkins, Director, Walnut Creek Field Office, NRC Region IV
J. A. Sloan, NRC Senior Resident Inspector, San Onofre Units 2 and 3
M. B. Fields, NRC Project Manager, San Onofre Units 2 and 3

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PDR ADOCK 05000361
G PDR

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P. O. Box 128
San Clemente, CA 92672
714-368-1480



ENCLOSURE

The enclosure to Mr. A. T. Howell's letter dated May 23, 1997, states, in part:

"Welding Procedure Specification 43-8-GT-1, Revision 0, regarding heat input, states, in part, '... the most influential process variables are travel speed and, to a lesser degree, amperage. Voltage, for the purpose of heat input determination with this process, is conservatively assumed to be constant at 14 volts. The upper limit for heat input in this WPS is 60,000 joules per inch. Only amperage/travel speed combinations under this limit ... shall be used ... The following measures shall be taken to minimize welding[-]induced sensitization: Adhere strictly to the specified limits in this WPS for interpass and heat input.'

"Contrary to the above, on April 23, 1997, the inspectors observed during gas tungsten arc welding performed on two Unit 3 safety-related replacement pressure measurement nozzles for reactor coolant piping that measures for minimizing welding-induced sensitization were not implemented. Specifically, the welding procedure specification specified limits for heat input variables had not been measured or monitored.

"This is a Severity Level IV violation (Supplement 1) (50-362/9708-01)."

REPLY TO THE VIOLATION

1. Reason for the Violation

The reason for the violation was a programmatic deficiency. Edison's welding program was inadequate because it required specific heat input limits be adhered to without specifying how to ensure the requirement was being met (i.e., measuring, monitoring, or training). Work organizations believed that if they followed their normal welding practices, they would have been below the 60,000 joules per inch heat input limit.

Please note the referenced inspection report calculated, for the welding process observed, a heat input of approximately 61,200 joules per inch. However, the data in the inspection report (10 volts x 102 amps x 60 seconds/minute divided by the distance of 1.18 inches per minute) produces a calculated heat input of 51,864 joules per inch. The number calculated in the inspection report uses a travel speed of 1 inch per minute. The actual travel speed is 1.18 inches per minute, based on the welder placing a half-circumference weld bead on a weld build up with a diameter of approximately 0.75 inches in approximately 1 minute.

2. Corrective Actions Taken and the Results Achieved

On April 28, 1997, Nuclear Oversight established interim monitoring of in-process welding activities. On May 9, 1997, Station Procedure SO123-V-7.20.1, "ASME General Welding Standards," was changed to include interim guidance for the monitoring of in-process welding parameters by welding engineers, and Nuclear Oversight. Edison has performed a number of follow-up surveillances on heat input monitoring (using tong testers), and found the heat input to be in the range of 32,000 to 45,000 joules per inch.

3. Corrective Actions That Will Be Taken

An Edison welding team will evaluate this issue and implement any appropriate changes necessary for final issue resolution (training and/or periodic monitoring/measuring). This effort will begin after the Unit 3 outage, and is expected to be completed by September 30, 1997.

4. Date When Full Compliance Will be Achieved

Full compliance was achieved on April 28, 1997, when Nuclear Oversight established an interim monitoring program to address in-process welding.