



SOUTHERN CALIFORNIA  
**EDISON**<sup>®</sup>

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A. Edward Scherer  
Manager of  
Nuclear Regulatory Affairs

December 2, 2004

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Subject: **Docket No. 50-362**  
**Additional Information Supporting the Third Ten-Year Inservice**  
**Inspection (ISI) Interval Relief Request**  
**ISI-3-13 Request to Use Alternative To ASME Code Rules For**  
**The Embedded Flaw Repair Process for Control Element Drive**  
**Mechanism Nozzle 56**  
**San Onofre Nuclear Generating Station Unit 3**

Dear Sir or Madam,

This letter submits additional information to revise and to support the Southern California Edison (SCE) Company's Relief Request ISI-3-13, submitted by letter from A. E. Scherer (SCE) dated October 26, 2004. Relief Request ISI-3-13 requests permission to allow the use of the embedded flaw repair process as an alternative to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code process for the as-found configuration of Control Element Drive Mechanism (CEDM) Nozzle 56.

This letter revises Section 6.0 "Duration of the Proposed Alternative" from the "third in-service inspection interval" to "one Unit 3 operating cycle, which is expected to begin in December of 2004 and end in the third quarter of 2006."

Prior to the end of the next Unit 3 operating cycle SCE will identify a long-term repair method and implement that repair on CEDM Nozzle 56 during the next Unit 3 refueling outage.

The following information is provided to respond to a NRC staff question raised during a November 23, 2004 teleconference.

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**NRC Question:**

The flaw depth measurement of penetration #56 of 0.513-inch does not include measurement uncertainty. Describe in detail how the calibration block described in Section 4.2 was produced and used to provide a measurement uncertainty value. Measurement uncertainty at other facilities for this type of inspection has generally been identified as 0.04-inch.

**SCE Response:**

A measurement uncertainty of 0.02 inches was added to the initial flaw depth of 0.513 inches. This uncertainty was conservatively based on calibration measurements made during the inspection as described below.

Measurement uncertainties of the axial and radial position of an indication can result from tool motion, transducer size and data scan rates. The measured depth of a crack tip using time of flight tip diffraction (TOFD) techniques depends on the differential time of travel for ultrasound in the penetration material. SCE is aware of the use of measurement uncertainty of 0.040 inches for "axial position." However, this measurement uncertainty is not applicable to "depth" measurements.

During the SONGS-3 inspection, a calibration standard with indications of known depth was used. This standard included several manufactured notches. One of these calibration notches compares directly to the indication found in CEDM #56. This calibration notch originates on the ID surface and has the following dimensions:

- Axial Length            0.5035 inches
- Width                    0.0094 inches
- Depth                    0.1285 inches (the tip is at the same relative position as an OD flaw 0.533 inches deep)

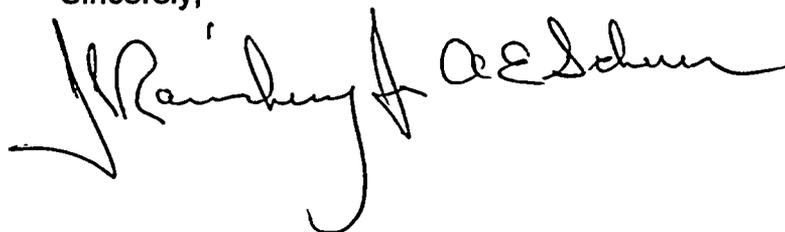
The inspection tool is calibration checked periodically during the CEDM (TOFD) inspection. Ten comparisons between the indicated depth and this calibration notch were made. The deviations ranged from -0.009 to +0.020 where + errors would reflect an underestimate of an OD originating flaw's depth. (The calibration check prior to inspection of CEDM #56 has a recorded deviation of +0.001 from the cal standard), It was concluded from this calibration data, that a reasonable and conservative estimate of the depth error associated with the indication found in CEDM #56 is 0.020 inches.

The principle impact of crack depth measurement uncertainties is in determination of remaining service life to the calculated allowable depth limit. Based on figure 4-3 of evaluation report LTR-PAFM-04-81, (attached to ISI-3-13), a flaw having an aspect ratio of 50 and a depth of approximately 87% through wall (0.575 inches depth) would

accommodate an evaluation period of approximately 2 years. Since SONGS will perform an inspection approximately every 20 months, depth measurement uncertainty as large as 0.062 inches would support a refueling outage inspection interval for CEDM penetration #56. This conservative conclusion takes no credit for the reinforcement provided by the OD overlay weld.

Should you have any questions, please contact Mr. Jack Rainsberry, Manager, Plant Licensing at (949) 368-7420.

Sincerely,

A handwritten signature in black ink, appearing to read "Jack Rainsberry". The signature is written in a cursive style with a large, sweeping initial "J".

cc: B. S. Mallett, Regional Administrator, NRC Region IV  
B. M. Pham, NRC Project Manager, San Onofre Units 2, and 3  
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 and 3