Southern California Edison Company

P. O. BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

M. O. MEDFORD
MANAGER, NUCLEAR LICENSING

TELEPHONE
(818) 302-1749

JUL 05 1985

Director, Office of Nuclear Reactor Regulation
Attention: Mr. J. A. Zwolinski, Chief
Operating Reactors Branch No. 5
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: Docket No. 50-206
Steam Generator Tube Inspections
San Onofre Nuclear Generating Station
Unit 1

Reference: Letter, M. O. Medford, SCE, to J. A. Zwolinski, NRC
Steam Generator Tube Inspections, March 18, 1985.

In accordance with License Condition 3.E, Southern California Edison is planning to perform an inspection of the San Onofre Unit 1 steam generators during the refueling outage that is scheduled to begin no later than November 30, 1985. This inspection, among other things, is designed to monitor the condition of the non-sleeved tubes in the steam generators. This letter transmits the inspection program required by License Condition 3.E.

A Technical Specification Steam Generator Tubing Eddy Current Inspection of steam generator "B" is scheduled during the refueling outage. As a result, the steam generator inspection program previously enclosed with the referenced letter remains applicable with the exception that the inspection will be conducted in steam generator "B" instead of steam generator "C". The inspection program, incorporating this revision, is provided as Enclosures (1) and (2) to this letter. Enclosure (1) provides an overview of the non-sleeved tube inspection program and Enclosure (2) provides a detailed description of the eddy current inspection program for the non-sleeved tubes.

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Prior to return to power following this refueling outage, a report on findings and corrective measures, relative to the inspection of the non-sleeved steam generator tubes will be provided.

If you should have any question or desire further information concerning the enclosures, please let me know.

Very truly yours,

M. O. Medford

Enclosures

cc: J. B. Martin, Regional Administrator, Region V
F. R. Huey, Senior Resident Inspector, Units 1, 2 and 3

ENCLOSURE (1)

GENERAL PLAN FOR NON-SLEEVED STEAM GENERATOR TUBES INSPECTION

1. Cold Secondary Side Leakage Test (If Necessary)
2. Eddy Current Testing of Non-Sleeved Steam Generator Tubes
   a. Multiple Frequency Eddy Current Inspection with Bobbin Coil Probe
   b. Multiple Frequency Eddy Current Inspection with 8X1 Probe
3. Steam Generator Evaluation/Repair
   a. Data Evaluation
   b. Tube Plugging (If Required)

ENCLOSURE (2)
EDDY CURRENT INSPECTION PROGRAM

1. Testing of Non-Sleeved Steam Generator Tubes

Approximately 30% of the non-sleeved tubes in steam generator "B" will be inspected from the hot leg side to just below the first tube support plate. Only "B" steam generator will be inspected since the results of previous inspections have indicated that all steam generators are performing in a like manner.

The inspection program will consist of all non-sleeved tubes within two tubes of the sleeving repair boundary and a four-by-four pattern throughout the remainder of the periphery. This program will be conducted utilizing the latest eddy currect equipment available to the industry and San Onofre Unit 1. Data will be collected using a MIZ-18 digital data collection system and analyzed with the DDA-4 digital analysis system.

Each tube will be inspected with two different probes, the standard bobbin coil and the 8x1 probe. Information gathered from the bobbin coil probe will allow correlation to previous inspection data to further assess the IGA progression rate in the non-sleeved region. Based on industry and San Onofre Unit 1 experience in IGA detection, one of the inspection frequencies utilized will be 100 KHz absolute. The 4x4 probe used in past inspections will be replaced by the industry standard 8x1 probe for the following reasons: 1) an 8x1 probe has eight individually monitored pancake probes which provides an indication of the circumferential extent of a defect and more sensitivity than does the series connection of each set of 4 pancake coils, and 2) utilizing the increased capacity of the MIZ-18 each of the 8 coils can be operated at 2 separate frequencies. This provides the capability to "mix out" the tubesheet entry signal thus eliminating the need to compromise sensitivity using the 4x4 probe.

If any tube inspected has an IGA indication greater than or equal to 50%, then the program will be expanded until one tube without detectable IGA is found. In addition, we will expand the inspection to the other two steam generators in accordance with the above inspection plan.

2. Data Evaluation and Repair

All data generated in this inspection will be evaluated using the DDA-4 digital data analysis system.

The plugging criteria will be consistent with that used to establish the original repair boundary. Specifically, all tubes with detectable IGA indications at the top of the tubesheet will be plugged. In addition, any non-sleeved tube immediately adjacent to a tube with an IGA indication greater than or equal to 50% will be plugged.