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March 18, 1985

Director, Office of Nuclear Reactor Regulation
Attention: 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

In accordance with License Condition 3.E, San Onofre Unit 1 is required to be shut down within six equivalent full power months of operation from the backfit outage which ended on November 27, 1984 to perform an inspection designed to monitor the condition of the non-sleeved tubes in the steam generators. This letter sets forth the inspection program which is required to be submitted to the Nuclear Regulatory Commission at least forty-five days prior to the scheduled shutdown by License Condition 3.E. Although it is anticipated that six equivalent months of operation will be achieved in June 1985, this shutdown may occur as early as May 1985 due to the summer requirements of the SCE system. If an early shutdown occurs, it is anticipated that four to four and one-half equivalent full power months of operation would be achieved at the time of the shutdown.

An overview of the steam generator inspection program is provided in Enclosure (1). Enclosure (2) provides a detailed description of the eddy current inspection program. Prior to our return to power from this inspection outage, a report on our findings and corrective measures will be provided.

As you are aware, we are currently discussing with your staff, the necessity of performing the License Condition Inspection. Since the issue has not been fully resolved, we are submitting this inspection plan in view of our plans to conduct the inspection, if required, during May.

If you should have any questions 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

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ENCLOSURE (1)

STEAM GENERATOR INSPECTION GENERAL OUTAGE PLAN

1. Cold Secondary Side Leakage Test (If Necessary)
2. Eddy Current Testing of Non-Sleeved Steam Generator Tubes
   a. Multiple Frequency Eddy Current Inpsection 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 "C" will be inspected from the hot leg side to just below the first tube support plate. Only "C" 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 current equipment available to the industry. 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 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 inidivually 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.