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1CAN109608

Mr. Leonard J. Callan
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Special Report - Once Through Steam Generator Tubing Surveillance -
Category C-3 Results

Dear Mr. Callan:

A steam generator tubing inservice inspection was performed on the Arkansas Nuclear One, Unit 1 (ANO-1) Once Through Steam Generators (OTSGs) during September and October 1996 (1R13 refueling outage). The inspection revealed that in the "A" OTSG, six (6) of the 485 inservice sleeved tubes, defined as group A-2 in ANO-1 Technical Specification 4.18.3.a.3, had indications. Since no approved sizing technique has been developed for flaws in OTSG sleeve/tube joints, all indications were dispositioned as flaws. These results place the "A" OTSG A-2 group in the C-3 category, since greater than 1% of the A-2 tubes inspected were determined to be defective. No other inspection groups in either OTSG were found to be category C-3. A summary of the ANO-1 OTSG inspection results, including the sleeve examinations, was discussed with the NRC Staff during a conference call on October 7, 1996. For C-3 results, ANO-1 Technical Specifications 4.18.6 and 6.12.5 require a Special Report to be submitted prior to resumption of plant operation. This submittal provides the required report.

The initial 20% inspection of all sleeves in the "A" OTSG identified one (1) indication, and thus an expansion of an additional 140 sleeves was performed. During this second sample inspection, one (1) additional indication was identified. Therefore, a third sample inspection was performed which included all the remaining inservice sleeves in the "A" OTSG. The inspection of the 244 remaining inservice sleeves resulted in five (5) additional indications in four tubes.

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A list of the tubes and their associated indications is summarized below. Figure 1, "OTSG Mechanical Sleeve" is provided as a representation of the subject tube/sleeve configuration.

Row	Tube	Call	Location	Characterization	Sleeve Material
75	17	SCI ¹	15S ² - 4.40"	Upper Lower Roll Upper Transition	690
79	1	MAI ³	UTE ⁴ - 0.53"	Upper Roll Upper Transition	690
79	5	SVI ⁵	UTE - 2.14"	Upper Roll Lower Transition	690
79	5	SCI	UTE - 1.31"	Upper Roll Expansion	690
81	1	MAI	UTE - 0.55"	Upper Roll Upper Transition	690
82	3	SCI	UTE - 1.47"	Upper Roll Expansion	690
102	4	SCI	UTE - 1.44"	Upper Roll Expansion	600

All sleeve/tube joints were inspected with a Plus Point probe. The sleeve freespan area was inspected with a bobbin probe. No indications were reported in the freespan area of the sleeves. The above listed tubes have been removed from service by plugging.

As stated in letter 1CAN049503, "Arkansas Nuclear One - Unit 1, Once Through Steam Generator Inservice Inspection Report," dated April 14, 1995, all accessible Inconel 600 sleeves (those which could be inspected without moving the ROGER tool) in each OTSG, were inspected during the 1R12 refueling outage using the Plus Point probe. One (1) indication was observed in "A" OTSG tube 102-4 during that sleeve inspection. This indication was determined to be a "geometric anomaly" and the tube was left in service. No change in the eddy current signal for this tube was noted during the 1R13 inspection. This tube is the only one containing an Inconel 600 sleeve that showed an eddy current indication in "A" OTSG during the 1R13 refueling outage. The 1R12 sleeve inspection was the first time a Plus Point probe was utilized for sleeve inspections at ANO-1. Post installation examinations for the sleeves were performed with cross wound probes.

The seven (7) indications listed above all occur in the parent tube and are considered to be non-service induced. Due to their location and small size, the cause of the indications is attributed to either scratches associated with sleeve installation which are within the detectability of the Plus Point probe, or to inspection anomalies associated with the use of the Plus Point probe.

¹ Single Circumferential Indication (SCI)

² Support Plate (S)

³ Multiple Axial Indication (MAI)

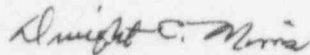
⁴ Upper Tube End (UTE)

⁵ Single Volumetric Indication (SVI)

Plus Point probe false calls have been confirmed on two (2) occasions in transitions. The false calls were confirmed during destructive examination on pulled tube samples. A method for removal of an OTSG sleeved tube has not been developed to date; therefore, removal of a sleeved tube was not performed during the 1R13 refueling outage to validate this assumption.

Since the cause of the indications is not considered to be service induced, no corrective measures to prevent recurrence have been determined to be necessary. The complete results of the OTSG inspections will be included in the 45-day post inspection report required by ANO-1 Technical Specification 4.18.6. Should you have any questions concerning this submittal, please contact me.

Very truly yours,



Dwight C. Mims
Director, Nuclear Safety

DCM/jjd

attachment

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OTSG MECHANICAL SLEEVE

