NRR-PMDAPEm Resource

From: Orenak, Michael
Sent: Friday, March 14, 2014 3:53 PM
To: BICE, DAVID B (ANO) (DBICE@entergy.com)
Cc: Bamford, Peter
Subject: ANO1 Steam Generator Inspection Report draft RAIs
Attachments: MF3251 draft RAI.docx

Dave,

The NRC staff has additional questions on your October 23, 2013 (ADAMS Accession No. ML13296A746) letter summarizing the results of the Spring 2013 steam generator tube inspections performed at Unit 1 during refueling outage 1R24. Please see the attached draft RAIs. We request that you review these draft RAIs and provide comments or inform us if you would like a teleconference to discuss by next Friday, March 21th.

Please let me know if you have any questions.

Mike

Michael Orenak
ANO 1 & 2 Project Manager
NRR - Division of Operating Reactor Licensing
Phone: 301-415-3229
e-mail: Michael.Orenak@nrc.gov

Hearing Identifier: NRR_PMDA
Email Number: 1168

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"Bamford, Peter" <Peter.Bamford@nrc.gov>
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"BICE, DAVID B (ANO) (DBICE@entergy.com)" <DBICE@entergy.com>
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REQUEST FOR ADDITIONAL INFORMATION

REGARDING ARKANSAS NUCLEAR ONE, UNIT 1

1R24 STEAM GENERATOR TUBE INSERVICE INSPECTION REPORT

DOCKET No. 50-313

TAC MF3251

1. Section 3.7 indicates that there is plastic deformation in the first-span tie rod region of both steam generators (SGs) and that as a result there will be residual bowing during normal power operation. Please discuss what effects this residual bowing may have on normal operation of the SGs.

2. Section 3.7 indicates that the direction of tie rod bowing in the first span for SGs A and B are not consistent. For SG B, some of the bowing is circumferential as opposed to being all radially inward, as with SG A. Please discuss any insights on why there is a difference in the direction of bowing.

3. Peripheral tubes were inspected for signs of denting to assist in identifying locations where the tube support plates are suspected to be hanging up (i.e., suspension of the plate in an elevated manner). Please discuss the results of these inspections and your assessment of these results.

4. Figure 3.7.1 indicates that one tie rod in the first span would have been in contact with a tube during normal (hot) operating conditions. Please confirm that no tube wear was identified in the first span region of the tube that was in contact with the tie rod. The staff notes that in 1R24 (2013 outage), tube stabilization and plugging was performed in tubes that were predicted to be in contact with the tie rods during operation (hot conditions). Was this a change in practice since the prior inspection?

5. Figure 3.7.1 indicates that the bow in 1R23 was slightly less than the bow observed in 1R22. Please discuss any insights on this trend.

6. Please provide a listing of the location, orientation, and measured size of all service induced wear indications detected during the 1R24 (2013) outage. It does not appear that this information was provided for the wear indications attributed to interaction between the tube and tube support plates.

7. The 95th percentile growth rate in SG A was higher in 2013 (1R24) than it was in 2011 (1R23). In addition, the maximum growth rate observed was higher in SG B in 2013 than it was in 2011. Please discuss any insights on this trend since the growth rate for wear tends to decrease with time. In addition, please discuss how this trend was factored into your operational assessment (an increasing growth rate with time).

8. In Tables 3.7.5 and 3.7.6, depths are not provided in the X-probe column when 2 wear scars were detected by an array coil. Please clarify why the depth for each of the wear

scars was not provided (presumably, the indications could have been sized with the array (X-) probe).