



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 1, 2014

Vice President, Operations
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72802

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 1 – REQUEST FOR ADDITIONAL
INFORMATION REGARDING THE STEAM GENERATOR TUBE INSPECTION
REPORT FOR REFUELING OUTAGE 1R24 (TAC NO. MF3251)

Dear Sir or Madam:

By letter dated October 23, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13296A746), Entergy Operations, Inc. (the licensee), submitted the Arkansas Nuclear One, Unit 1 (ANO-1) Steam Generator Tube Inspection Report for refueling outage 1R24 to ensure compliance with ANO-1 Technical Specification (TS) 5.5.9, "Steam Generator (SG) Program." The U.S. Nuclear Regulatory Commission (NRC) staff is currently reviewing the submittal and has determined that the additional information requested in the enclosure is needed to complete its review. Your response is requested no later than 30 days from the date of this letter.

If you have any questions, please contact me at (301) 415-2833 or by e-mail at Peter.Bamford@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Bamford" or similar, is written above the typed name.

Peter J. Bamford, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-313

Enclosure:
As stated

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION
REGARDING 1R24 STEAM GENERATOR TUBE INSERVICE INSPECTION REPORT
ENTERGY OPERATIONS, INC
ARKANSAS NUCLEAR ONE, UNIT 1
DOCKET NO. 50-313

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1. Section 3.7 indicates that there is tie rod bowing in the plastic range in the first-span tie rod region of both steam generators (SGs) and that as a result there will be some 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. As discussed in the telephone call on July 9, 2013 (ADAMS Accession No. ML13172A029), peripheral tubes were inspected for signs of denting to assist in identifying locations where the tube support plates are suspected not to be free-floating. 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 may 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 NRC 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). Please explain if this is a change in practice since the prior inspection.
5. Figure 3.7.1 indicates that the bow in 1R23 had slightly less bow than was observed in 1R22. Please discuss any insights on condition.
6. Please provide a listing of the location, orientation, and measured size of all service-induced wear indications detected during the 1R24 (2013) outage and discuss any wear indications attributed to interaction between the tube and tube support plates.

Enclosure

7. The 95th percentile growth rate in SG A appears 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 condition since the growth rate for wear tends to decrease with time. In addition, please discuss how this condition 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 two wear scars were detected by an array coil. Please clarify why the depth for each of the wear scars was not provided and discuss how the indications could have been sized with the array (X-) probe).

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/RA by FLyon for/

Peter J. Bamford, Project Manager
Plant Licensing Branch IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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ADAMS Accession No.: ML14078A112

*memo dated 3/7/2014

**previously concurred

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