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**To:** ["NMosher@Entergy.com"](mailto:NMosher@Entergy.com)  
**Cc:** [Loveless, David](#); [George, Gerond](#)  
**Subject:** Request for Information - Unit 1 ISI  
**Date:** Tuesday, July 16, 2019 11:23:00 AM

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Natalie,

Here is the request for information as discussed. Please keep me informed of any changes to outage scope or schedule so that I can adjust accordingly.

Thank you.

Wayne Sifre  
Senior Reactor Inspector  
817-200-1193

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**Information Request**  
**July 16, 2019**  
**Notification of Inspection and Request for Information**  
**Arkansas Nuclear One, Unit 1**  
**NRC Inspection Reports 05000313/2019004 and 05000368/2019004**

On October 23, 2019, reactor inspector(s) from the Nuclear Regulatory Commission's (NRC) Region IV office will perform the baseline inservice inspection at Arkansas Nuclear One, using NRC Inspection Procedure 71111.08, "Inservice Inspection Activities." Experience has shown that this inspection is a resource intensive inspection both for the NRC inspector(s) and your staff. In order to minimize the impact to your onsite resources and to ensure a productive inspection, we have enclosed a request for documents needed for this inspection. These documents have been divided into two groups. The first group (Section A of the enclosure) identified information to be provided prior to the inspection to ensure that the inspector(s) are adequately prepared. The second

group (Section B of the enclosure) identifies the information the inspector(s) will need upon arrival at the site. It is important that all of these documents are up to date and complete in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspection.

We have discussed the schedule for these inspection activities with your staff and understand that our regulatory contact for this inspection will be Ms. N. Mosher of your licensing organization. The tentative inspection schedule is as follows:

Preparation week: October 15 – 21, 2019

Onsite weeks: October 23 – 31, 2019

Our inspection dates are subject to change based on your updated schedule of outage activities. If there are any questions about this inspection or the material requested, please contact the lead inspector Wayne Sifre at (817) 200-1193 ([Wayne.Sifre@nrc.gov](mailto:Wayne.Sifre@nrc.gov)).

A. Information to be Provided to the Inspector(s) for Review during the Preparation Week (October 15, 2019):

A.1 ISI/Welding Programs and Schedule Information

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- a. A detailed schedule (including preliminary dates) of:
  - i. Nondestructive examinations planned for ASME Code Class Components performed as part of your ASME Section XI, risk informed (if applicable), and augmented inservice inspection programs during the upcoming outage.
  - ii. Examinations planned for Alloy 82/182/600 components that are not included in the Section XI scope (If applicable)
  - iii. Examinations planned as part of your boric acid corrosion control program (Mode 3 walkdowns, bolted connection walkdowns, etc.)
  - iv. Welding activities that are scheduled to be completed during the upcoming outage (ASME Class 1, 2, or 3 structures, systems, or components)

- b. A copy of ASME Section XI Code Relief Requests and associated NRC safety

evaluations applicable to the examinations identified above.

- i. A list of ASME Code Cases currently being used to include the system and/or component the Code Case is being applied to.
- c. A list of nondestructive examination reports which have identified recordable or rejectable indications on any ASME Code Class components since the beginning of the last refueling outage. This should include the previous Section XI pressure test(s) conducted during start up and any evaluations associated with the results of the pressure tests.
- d. A list including a brief description (e.g., system, code class, weld category, nondestructive examination performed) associated with the repair/replacement activities of any ASME Code Class component since the beginning of the last outage and/or planned this refueling outage.
- e. If reactor vessel weld examinations required by the ASME Code are scheduled to occur during the upcoming outage, provide a detailed description of the welds to be examined and the extent of the planned examination. Please also provide reference numbers for applicable procedures that will be used to conduct these examinations.
- f. Copy of any 10 CFR Part 21 reports applicable to structures, systems, or components within the scope of Section XI of the ASME Code that have been identified since the beginning of the last refueling outage.
- g. A list of any temporary noncode repairs in service (e.g., pinhole leaks).
- h. Please provide copies of the most recent self-assessments for the inservice inspection, welding, and Alloy 600 programs

## A.2 Reactor Pressure Vessel Head

- a. Provide a detailed scope of the planned bare metal visual examinations (e.g., volume coverage, limitations, etc.) of the vessel upper head penetrations and/or any nonvisual nondestructive examination of the reactor vessel head

including the examination procedures to be used.

- i. Provide the records recording the extent of inspection for each penetration nozzle including documents which resolved interference or masking issues that confirm that the extent of examination meets 10 CFR 50.55a(g)(6)(ii)(D).
  - ii. Provide records that demonstrate that a volumetric or surface leakage path examination assessment was performed.
- b. Copy of current calculations for EDY, and RIY as defined in Code Case N-729-1 that establish the volumetric and visual inspection frequency for the reactor vessel head and J-groove welds.

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A.3 Boric Acid Corrosion Control Program

- a. Copy of the procedures that govern the scope, equipment and implementation of the inspections required to identify boric acid leakage and the procedures for boric acid leakage/corrosion evaluation.
- b. Please provide a list of leaks (including code class of the components) that have been identified since the last refueling outage and associated corrective action documentation. If during the last cycle, the unit was shutdown, please provide documentation of containment walkdown inspections performed as part of the boric acid corrosion control program.

A.4 Steam Generator Tube Inspections

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- a. A detailed schedule of steam generator secondary side inspection activities for the upcoming outage (if occurring).

A.5 Additional Information Related to all Inservice Inspection Activities

- b. A list with a brief description of inservice inspection, boric acid corrosion control program, and steam generator tube inspection related issues (e.g., condition reports) entered into your corrective action program since the beginning of the last refueling outage. For example, a list based upon data base searches using key words related to piping or steam generator tube degradation such as: inservice inspection, ASME Code, Section XI, NDE, cracks, wear, thinning, leakage, rust, corrosion, boric acid, or errors in

piping/steam generator tube examinations.

- c. Provide training (e.g. Scaffolding, Fall Protection, FME, Confined Space) if they are required for the activities described in A.1 through A.4.
- d. Please provide names and phone numbers for the following program leads:

Inservice inspection (examination, planning)

Containment exams

Reactor pressure vessel head exams

Snubbers and supports

Repair and replacement program

Licensing

Site welding engineer

Boric acid corrosion control program

Steam generator inspection activities (site lead and vendor contact)

B. Information to be Provided Onsite to the Inspector(s) at the Entrance Meeting (October 23, 2019):

B.1 Inservice Inspection / Welding Programs and Schedule Information

- a. Updated schedules for inservice inspection/nondestructive examination activities, including planned welding activities, and schedule showing contingency repair plans, if available.
- b. For ASME Code Class welds selected by the inspector(s) from the lists provided from section A of this enclosure, please provide copies of the following documentation for each subject weld:
  - i. Weld data sheet (traveler).
  - ii. Weld configuration and system location.
  - iii. Applicable Code Edition and Addenda for weldment.

- iv. Applicable Code Edition and Addenda for welding procedures.
  - v. Applicable welding procedures used to fabricate the welds.
  - vi. Copies of procedure qualification records (PQRs) supporting the weld procedures from B.1.b.v.
  - vii. Copies of welder's performance qualification records (WPQ).
  - viii. Copies of the nonconformance reports for the selected welds (If applicable).
  - ix. Radiographs of the selected welds and access to equipment to allow viewing radiographs (if radiographic testing was performed).
  - x. Copies of the preservice examination records for the selected welds.
  - xi. Readily accessible copies of nondestructive examination personnel qualifications records for reviewing.
- c. For the inservice inspection related corrective action issues selected by the inspector(s) from section A of this enclosure, provide a copy of the corrective actions and supporting documentation.
- d. For the nondestructive examination reports with relevant conditions on ASME Code Class components selected by the inspector(s) from Section A above, provide a copy of the examination records, examiner qualification records, and associated corrective action documents.

- e. A copy of (or ready access to) most current revision of the inservice inspection program manual and plan for the current interval.
  
- f. For the nondestructive examinations selected by the inspector(s) from section A of this enclosure, provide a copy of the nondestructive examination procedures used to perform the examinations (including calibration and flaw characterization/sizing procedures). For ultrasonic examination procedures qualified in accordance with ASME Code, Section XI, Appendix VIII, provide documentation supporting the procedure qualification (e.g. the EPRI performance demonstration qualification summary sheets). Also, include qualification documentation of the specific equipment to be used (e.g., ultrasonic unit, cables, and transducers including serial numbers) and nondestructive examination personnel qualification records.

B.2 Reactor Pressure Vessel Head (RPVH)

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Documents requested under Inspection Procedure 71007, "Reactor Vessel Head Replacement Inspection."

B.3 Boric Acid Corrosion Control Program

- a. Please provide boric acid walk down inspection results, an updated list of boric acid leaks identified so far this outage, associated corrective action documentation, and overall status of planned boric acid inspections.
  
- b. Please provide any engineering evaluations completed for boric acid leaks identified since the end of the last refueling outage. Please include a status of corrective actions to repair and/or clean these boric acid leaks. Please identify specifically which known leaks, if any, have remained in service or will remain in service as active leaks.

B.4 Steam Generator Tube Inspections

- a. Copies of the Examination Technique Specification Sheets and associated justification for any revisions.
  
- b. Please provide a copy of the eddy current testing procedures used to perform the steam generator tube inspections (specifically calibration and flaw characterization/sizing procedures, etc.).

- c. Copy of the guidance to be followed if a loose part or foreign material is identified in the steam generators.
- d. Identify the types of SG tube repair processes which will be implemented for defective SG tubes (including any NRC reviews/evaluations/approvals of this repair process). Provide the flaw depth sizing criteria to be applied for ET indications identified in the SG tubes.
- e. Copy of documents describing actions to be taken if a new SG tube degradation mechanism is identified.
- f. Provide procedures with guidance/instructions for identifying (e.g. physically locating the tubes that require plugging) and plugging SG tubes.
- g. List of corrective action documents generated by the vendor and/or site with respect to steam generator inspection activities.

#### B.5 Codes and Standards

- a. Ready access to (i.e., copies provided to the inspector(s) for use during the inspection at the onsite inspection location, or room number and location where available):
  - i. Applicable Editions of the ASME Code (Sections V, IX, and XI) for the inservice inspection program and the repair/replacement program.
  - ii. EPRI and industry standards referenced in the procedures used to perform the steam generator tube eddy current examination.
- b. Copy of the performance demonstration initiative (PDI) generic procedures with the latest applicable revisions that support site qualified ultrasonic examinations of piping welds and components (e.g., PDI-UT-1, PDI-UT-2, PDI-UT-3, PDI-UT-10, etc.).
- c. EPRI and industry standard references in the site procedures used to perform



the SG tube eddy current examination, which includes EPRI documents: TR-107621-R1, "Steam Generator Integrity Assessment Guidelines," TR-107620-R1, "Steam Generator In-Situ Pressure Test Guidelines," Steam Generator Management Program: Steam Generator Integrity Assessment Guidelines, Part 10, and 1003138, "Pressurized Water Reactor Steam Generator Examination Guidelines."

- d. Boric Acid Corrosion Guidebook Revision 1 – EPRI Technical Report 1000975.