



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

August 1, 2017

Mr. Daniel G. Stoddard  
Senior Vice President and  
Chief Nuclear Officer  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

**SUBJECT: NORTH ANNA POWER STATION UNIT 2 – NOTIFICATION OF INSPECTION  
AND REQUEST FOR INFORMATION**

Dear Mr. Stoddard:

From September 18 - 22, 2017, the U.S. Nuclear Regulatory Commission (NRC) will perform the baseline inservice inspection (ISI) at the North Anna Power Station, Unit 2, in accordance with NRC inspection procedure 71111.08, "Inservice Inspection Activities." Experience has shown that this inspection is resource-intensive for both the NRC inspectors 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 information. Section A of the Enclosure identifies information to be provided prior to the inspection, to ensure adequate sample selection and preparation. Section B of the Enclosure identifies additional information the inspectors will need upon arrival at the site, to complete the review of inspection samples. The inspection staff would appreciate if all requested 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 this inspection activity with your staff, and understand that our regulatory contact for this inspection will be Mr. Robert Page of your organization. Our inspection dates are subject to change based on your updated schedule of outage activities. If there are any questions about this inspection, changes to the schedule of activities, or the material requested, please contact the inspector, Robert Carrion, at 404-997-4522, or [Robert.Carrion@nrc.gov](mailto:Robert.Carrion@nrc.gov).

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public inspections, exemptions, requests for withholding," of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, and its Enclosure, will be available electronically for public inspection in the NRC Public Document Room, or from the Publicly Available Records (PARS)

component of NRC's Agencywide Documents Access and Management System (ADAMS); accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Shakur A. Walker, Chief  
Engineering Branch 3  
Division of Reactor Safety

Docket No. 50-339  
License No. NPF-7

Enclosure:  
ISI Document Request

cc: Distribution via Listserv

SUBJECT: NORTH ANNA POWER STATION UNIT 2 – NOTIFICATION OF INSPECTION AND REQUEST FOR INFORMATION

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## INSERVICE INSPECTION DOCUMENT REQUEST

Site: North Anna Power Station, Unit 2

Docket No: 50-339

Inspection Dates: September 18 - 22, 2017

Entrance Meeting: September 18, 2017

Inspection Procedure: Inspection Procedure (IP) 71111.08, "Inservice Inspection Activities," dated December 22, 2016

Inspector: Robert Carrion, Senior Reactor Inspector

### A. Information Requested for the In-Office Preparation Week

Please provide the information requested in this section to the NRC Region II Office, in care of the inspector by September 8, 2017, in order to facilitate the selection of specific items that will be reviewed during the onsite inspection week. The information can be provided in hard copy or electronic format; however, electronic format is preferred, either by digital data storage device (compact disk, flash drive, etc.), or Web-based document management system.

The inspector will select specific samples from the information provided for items A.1 through A.4 below, and then request additional documents needed for the onsite inspection week as described in Section B of this Enclosure. The specific documents selected for Section B should be available, and ready for review, on the first day of inspection. If requested documents are large and only hardcopies are available, please inform the inspector and provide the subject documentation during the first day of the onsite inspection. All documents requested in this section correspond to the Unit scheduled to be in a refueling outage during the onsite inspection week, unless an information request item explicitly states that it applies to all operating Units. Additionally, some of the information requested may not apply to the site, depending on the scope of refueling outage activities, or other plant-specific conditions. If there are any questions regarding this information request, please contact the inspector as soon as possible.

#### A.1 Non-destructive Examination and Welding Activities

- a. A detailed schedule (including preliminary dates) of nondestructive examinations (NDEs) planned for the structures, systems, and components listed below as part of the Inservice Inspection (ISI) Program required by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section XI, as incorporated by reference in 10 CFR 50.55a, and other augmented ISI activities:
  - ASME Code Class 1, 2, and 3 components and supports (including Risk-Informed ISI Program)
  - ASME Code Class MC and metallic liners of Class CC components (e.g., reactor building containment liner)

- ASME Code Class CC components
  - ASME Code Class MC supports
  - Alloy 82/182/600 components (ASME Code Cases N-722-1 and N-770-2)
  - reactor vessel internals (e.g., Electric Power Research Institute (EPRI) MRP-227 Program)
  - other components to be inspected through NDE in accordance with industry initiatives or requirements (e.g., Flow Accelerated Corrosion Program)
- b. A detailed schedule (including preliminary dates) of welding activities to be completed on ASME Code Class 1, 2, or 3 components and supports during the upcoming refueling outage.
- c. A list of NDE reports (ultrasonic, radiographic, magnetic particle, and liquid penetrant) addressing surface or volumetric indications that were analytically evaluated, and accepted for continued service in ASME Code Class 1, 2, and 3 components since the beginning of the last refueling outage. This list should also include any evaluations for continuous service performed as a result of Section XI pressure test(s) conducted during start up from the last refueling outage.
- d. A list of the welds in ASME Code Class 1, 2, and 3 systems that have been fabricated due to component repair/replacement activities since the beginning of the last refueling outage. Please include a brief description of the welds such as system, material, pipe size, weld number, and NDEs performed. Additionally, please indicate which of those welds are risk-significant.
- e. If NDE of pressure retaining welds in the reactor vessel shell required by the ASME BPVC, Section XI, Subsection IWB (also known as “10-year Reactor Vessel ISI”) 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 include reference numbers for applicable procedures that will be used to conduct these examinations.
- f. A copy of ASME BPVC, Section XI Relief Requests and the associated NRC Safety Evaluation Reports (SERs) applicable to the NDEs scheduled for the upcoming refueling outage.
- g. A list of temporary Code or temporary non-Code repairs installed in ASME Code Class components (e.g., pinhole leaks or mechanical clamping devices).
- h. A copy of the most recent program self-assessments addressing the ISI Program and welding activities.

#### A.2 Reactor Pressure Vessel Upper Head Penetration Inspection Activities

- a. A detailed schedule (including preliminary dates) of NDEs planned for the reactor pressure vessel upper head penetrations (VUHPs) to meet the requirements of ASME Code Case N-729-4, as incorporated by reference in 10 CFR 50.55a.
- b. A detailed scope of the planned NDEs for the reactor pressure VUHPs. Please identify the types of NDE methods to be used on each specific part of the vessel upper head to

meet the augmented inspection requirements of ASME Code Case N-729-4, as incorporated by reference in 10 CFR 50.55a.

**A.3 Boric Acid Corrosion Control Program Inspection Activities**

- a. A copy of the procedures governing the implementation of the Boric Acid Corrosion Control Program (BACCP), including procedures required to identify boric acid leakage, and perform boric acid leakage/corrosion evaluations.
- b. A list of leaks in ASME Code Class components which have been identified since the last refueling outage, including reference to the associated corrective action program (CAP) documentation. If during the last cycle, the Unit was shutdown, please provide documentation of containment walkdown inspections performed as part of the BACCP.
- c. Copy of the most recent self-assessment performed for the BACCP.

**A.4 Other Information Related to All Inservice Inspection Activities**

- a. A list with a brief description of ISI-related issues entered into the CAP for all operating Units since the beginning of the last Unit 2 refueling outage, including issues related to the BACCP. For example, provide a list of condition reports based upon database searches using keywords related to piping, and vessel degradation such as: ISI, ASME Code, Section XI, NDE, welding, reactor vessel, reactor coolant system, crack, wear, thinning, leakage, thru-wall, rust, corrosion, boric acid, or errors in piping examinations.
- b. A copy of the site's response to recent NRC generic communications, and other industry operating experience notifications, associated with the ISI and structural integrity of ASME Code Class components issued since the beginning of the last refueling outage (e.g., Generic Letters, Information Notices).
- c. Names and contact information for the following program leads:
  - ISI Program (examination, planning)
  - Reactor Containment Building ISI Program
  - Alloy 600 Program
  - VUHP Inspection Program
  - Snubbers and Supports Inspection Program
  - Repair and Replacement Program
  - Licensing
  - Site Welding
  - BACCP

**B. Information Requested for the Onsite Inspection Week(s)**

Please provide the information requested below in hard copy or electronic (preferred) format to the inspector at the entrance meeting, in order to finalize the planning of inspection activities onsite. Prior to the onsite inspection, the inspector will select part of the inspection samples from the information provided in response to Section A of this Enclosure, and then request additional information needed to complete the review. There is a possibility that some of the inspection samples, for which direct observation is

desired (e.g., planned NDEs), will not be selected until the inspector arrives onsite and confirms the current schedule of refueling outage activities for that week. All documents requested in this section correspond to the Unit scheduled to be in a refueling outage during the onsite inspection week, unless an information request item explicitly states that it applies to all operating Units. Additionally, some of the information requested may not apply depending on the scope of refueling outage activities, or other plant-specific conditions.

#### B.1 Non-destructive Examination Activities, Welding Activities, and Schedule Information

- a. Updated schedules for the planned NDE and welding activities described in the response to items A.1.a and A.1.b of this Enclosure.
- b. For the NDEs selected by the inspector from item A.1.a of this Enclosure, please provide a copy of the NDE 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, please provide documentation supporting the procedure qualification (e.g., the EPRI performance demonstration qualification summary sheets). Please include documentation of the specific equipment to be used (e.g., ultrasonic unit, cables, and transducers including serial numbers), and NDE personnel qualification records.
- c. For the NDE reports with relevant indications on ASME Code Class 1, 2, and 3 components selected by the inspector from item A.1.c of this Enclosure, please provide a copy of the examination records, NDE qualification records, and associated corrective action documents, including technical evaluations supporting the acceptability of the indications for continuous service.
- d. For the ASME Code Class 1, 2, and 3 welds selected by the inspector from item A.1.d of this Enclosure, please provide copies of the following documentation for each subject weld:
  - weld data sheet (traveler)
  - weld configuration and supporting drawings (e.g., ISI isometric drawings)
  - applicable ASME BPVC Edition and Addenda
  - Weld Procedure Specification (WPS) used to fabricate the welds
  - Procedure Qualification Records (PQRs) supporting the WPS
  - mechanical test reports supporting the applicable PQRs
  - welder performance qualifications records, including documentation that welder maintained proficiency in the applicable welding processes specified in the WPS
  - examination records for the NDEs performed during weld fabrication
  - preservice NDE records
  - personnel qualification records for both fabrication and preservice NDEs
  - nonconformance reports for the selected welds (if applicable)

#### B.2 Reactor Pressure Vessel Upper Head Penetration Inspection Activities

- a. A copy of the latest calculation of effective degradation years (EDY) and re-inspection years (RIY) for the VUHP crack initiation and propagation susceptibility parameters.
- b. A copy of NDE reports from the last visual and non-visual VUHP examinations.

- c. If visual and/or non-visual NDEs of the VUHPs are planned for the upcoming refueling outage, please provide the following:
- a copy of the procedures governing the implementation of NDEs
  - drawings showing the configuration of the VUHPs within the scope of the examinations (e.g., upper head insulation configuration, fabrication drawings of the nozzle attachments, geometrical limitations)
  - documentation demonstrating that the scope of the NDEs will meet the minimum coverage required by ASME Code Case N-729-4, as modified by 10 CFR 50.55a
  - documentation demonstrating the detection capability and qualification of the NDE personnel, procedures, and equipment in accordance with 10 CFR 50.55a
  - identify any changes in equipment configurations used for the VUHPs examinations that differ from that used in the vendor qualification or demonstration report(s)

### B.3 Boric Acid Corrosion Control Program Inspection Activities

- a. Inspection results for boric acid walkdowns, including an updated list of boric acid leaks identified during the current refueling outage with associated corrective action documentation, and overall status of planned boric acid inspections.
- b. A list of 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 specify which known leaks, if any, have remained in service, or will remain in service, as active leaks.
- c. In accordance with NRC IP 71111.08, the inspector would like to conduct an independent boric acid walkdown of the Reactor Building Containment early in the inspection week. Please have knowledgeable BACCP staff available to accompany the inspector during the walkdown.

### B.4 Other Information Related To All Inservice Inspection Activities

- a. For the ISI-related corrective action issues selected by the inspector from item A.4.a of this Enclosure, please provide copies of the corrective action documents and supporting documentation (e.g., cause evaluations, work orders, corrective action plan).
- b. An updated list of ISI-related issues entered into the CAP for the current refueling outage, including issues related to the SG tube inspections and BACCP.
- c. A copy of or ready access to:
- applicable editions and sections of the ASME BPVC (e.g., Sections II, III, V, IX, and XI) for the ISI and repair/replacement activities selected for review
  - industry standards referenced in the procedures for the BACCP
  - a current revision of the ISI Program Manual and Plan for the current interval



**Inspector(s) Contact Information:**

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 Senior Reactor Inspector  
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 Division of Reactor Safety  
 404-997-4522  
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 Attn: Robert Carrion  
 245 Peachtree Center Avenue, Suite 1200  
 Atlanta, GA 30303

**LIST OF ACRONYMS**

ASME	American Society of Mechanical Engineers
BACCP	Boric Acid Corrosion Control Program
BPVC	Boiler and Pressure Vessel Code
CAP	Corrective Action Program
EDY	Effective Degradation Year
EPRI	Electric Power Research Institute
IP	Inspection Procedure
ISI	Inservice Inspection
NDE	Non-destructive Examination
PQRs	Procedure Qualification Records
RIY	Re-inspection Years
SER	Safety Evaluation Report
TS	Technical Specification
VUHP	Vessel Upper Head Penetration
WPS	Welding Procedure Specification