UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303

March 25, 2015

Richard M. Glover
Site Vice President
H.B. Robinson Steam Electric Plant
Duke Energy
3581 West Entrance Road
Hartsville, SC 29550

SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT UNIT 2 – NOTIFICATION OF INSPECTION AND REQUEST FOR INFORMATION

Dear Mr. Glover:

From May 18 – 22, 2015, the U.S. Nuclear Regulatory Commission (NRC) will perform a baseline inservice inspection at the H.B. Robinson Steam Electric Plant, 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 will appreciate it if all the documents requested 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 Christine Caudell 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 or the material requested, please contact the lead inspector, Michael Coursey at 404-997-4671, or Michael.Coursey@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 "Rules of Practice," 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. 50-261
License No. DPR-23

Enclosure:
Inservice Inspection Document Request

cc: Distribution via Listserv

R. Glover

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OFFICE	RII:DRS/EB3	RII:DRS/EB3		
SIGNATURE	MSC2	SAW4		
NAME	M. Coursey	S. Walker		
DATE	3/ 24 /2015	3/ 24 /2015		
E-MAIL COPY	**YES** NO	**YES** NO		

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INSERVICE INSPECTION DOCUMENT REQUEST

Site:	H.B. Robinson Steam Electric Plant Unit 2
Docket No.:	50-261
Inspection Dates:	May 18 – 22, 2015 (Inservice Inspection)
Entrance Meeting:	May 18, 2015
Inspection Procedure:	Inspection Procedure 71111.08, "Inservice Inspection Activities," Dated November 13, 2014
Inspector(s):	Michael Coursey, Reactor Inspector (Lead 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 lead inspector, by May 4, 2015, in order to facilitate the selection of specific items that will be reviewed during the onsite inspection week(s). 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(s) will select specific samples from the information provided for items A.1 through A.5 below, and then request additional documents needed for the onsite inspection week(s) 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(s), 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(s), 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 lead 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 (SSCs) 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–770–1)
- 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 startup 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 <u>Reactor Pressure Vessel Upper Head Penetration Inspection Activities</u>

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-729-1, 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-729-1, 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 Steam Generator Tube Inspection Activities

a. A detailed schedule of steam generator (SG) tube inspection, eddy current (EC) data analyses, tube in-situ pressure testing, tube repairs, and SG secondary side inspection activities for the upcoming refueling outage.

b. A copy of the current version of the following documents:

- SG ISI Inspection Program and Plan
- Condition Monitoring Assessment
- Operational Assessment

c. A copy of the current Technical Specifications (TSs) for the SG ISI Program, including recent NRC SERs for license amendments issued since the last refueling outage (e.g., alternate repair criteria as a result of the incorporation of TS Task Force activities).

d. Confirmation of whether SG primary-to-secondary leakage was identified and quantified during the previous operating cycle. If primary-to-secondary leakage was identified, please provide documentation describing the affected SG and corrective actions completed, or planned for this condition.

NOTE: The following information request items are applicable only if EC examination of the SG tubes will occur during the upcoming refueling outage.

e. A copy of the most recent Degradation Assessment.

f. A copy of the EC Examination Plan describing the scope of SG tube examinations, including examination methods such as bobbin, rotating, or array probes, and the percentage of tubes to be examined. Do not provide this information separately if it is already included in other documentation requested.

g. A copy of the SG plant-specific degradation history provided to the vendor performing EC examination of the SG tubes during the upcoming outage. Please include information on issues pertaining to the secondary side of the SGs (including items such as loose parts, fouling, top of tube sheet condition, and crud removal amounts, etc.). Do not provide this information separately if it is already included in other documentation requested.

h. A copy of the following documents, as applicable:

- SG Eddy Current Data Analyst Guidelines
- Site Validated Eddy Current Techniques
- Eddy Current Technique Qualification Records per EPRI Appendix H or I

i. A copy of the most recent program self-assessments for SG tube integrity, loose parts monitoring, and secondary side water chemistry control.

j. The location of the primary, secondary, and resolution analysis teams.

A.5 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 SG tube inspections and the BACCP. For example, provide a list of condition reports based upon database searches using keywords related to piping, vessels, and SG tube degradation such as: ISI, ASME Code, Section XI, NDE, welding, SG tube, reactor vessel, SG, reactor coolant system, crack, wear, thinning, leakage, thru-wall, rust, corrosion, boric acid, or errors in piping/SG tube 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
- SG Inspection Program (site lead and vendor contact)

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

Please provide the information requested below in hard copy or electronic (preferred) format to the lead inspector at the entrance meeting, in order to finalize the planning of inspection activities onsite. Prior to the onsite inspection, the inspector(s) 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(s) arrive onsite, and confirm 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(s), 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(s) 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(s) 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(s) 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 record
- 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-729-1, 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 inspection procedure (IP) 71111.08, the inspector(s) 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(s) during the walkdown.

B.4 Steam Generator Tube Inspection Activities

a. An updated schedule of SG tube inspection activities, including potential in-situ pressure tests, tube repairs, and secondary side inspections.

NOTE: The following information request items are applicable only if EC examination of the SG tubes will occur during the upcoming refueling outage.

b. A copy of the Eddy Current Examination Technique Specification Sheets (ETSS) from the EPRI Performance Demonstration Database, that are applicable to the scheduled examinations of SG tubes.

c. A copy of the EC examination procedures governing the SG tube examination activities. Specifically, provide the procedures for calibration, flaw detection, and flaw sizing.

d. Access to the training and qualification records of personnel performing EC data analysis, including training material and test results for any site-specific training provided to the data analysts.

e. Access to the certification records of EC equipment (i.e., EC instruments, probes, and calibration standards).

f. A copy of the procedures to be followed if a loose part or foreign material is identified in the SGs.

g. Documentation demonstrating that the in-situ pressure test screening criteria are in accordance with the applicable EPRI Guidelines. Please have knowledgeable staff available to discuss the analytical method used to determine the in-situ pressure test screening criteria.

h. A list of corrective action documents generated by the vendor with respect to SG tube inspection activities during the current refueling outage.

B.5 Other Information Related To All Inservice Inspection Activities

a. For the ISI-related corrective action issues selected by the inspector(s) from item A.5.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
- EPRI and other industry standards referenced in the procedures used to perform the SG tube inspection activities
- a current revision of the ISI Program Manual and Plan for the current interval

Inspector(s) Contact Information:

Michael Coursey
Reactor Inspector
Engineering Branch 3
Division of Reactor Safety
404-997-4671

Mailing Address:
US NRC Region II
Attn: Michael Coursey
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
EC	Eddy Current
EDY	Effective Degradation years
EPRI	Electric Power Research Institute
ETSS	Examination Technique Specification Sheets
IP	Inspection Procedure
ISI	Inservice Inspection
NDEs	Non-destructive Examination
PQRs	Procedure Qualification Records
RIY	Re-inspection Years
SERs	Safety Evaluation Reports
SG	Steam Generator
SSCs	Systems, Structures, or Components
TSs	Technical Specifications
VUHPs	Vessel Upper Head Penetrations
WPS	Weld Procedure Specification