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10 CFR 50.55a

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United States Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

H.B. Robinson Steam Electric Plant, Unit No. 2
Docket No. 50-261 / Renewed License No. DPR-23

Subject: Unit 2, Refuel 31 (R231) Owner's Activity Report, Fifth 10-Year Inservice Inspection Interval

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.55a "Codes and Standards", Duke Energy Progress, LLC is providing as an enclosure to this letter, the Owner's Activity Report, Form OAR-1. This report has been prepared in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 2007 Edition, 2008 Addenda, and is subject to the limitations and modifications of 10 CFR 50.55a(b)(2), with the exception of design and access provisions and preservice examination requirements. This report is further prepared in accordance with the requirements of ASME Code Case N-532-5 and covers inspection activities during Cycle 31 and Refueling Outage 31 (R231). R231 is the last of two outages of the second period in the fifth inspection interval and includes the Repair / Replacement activities from June 13, 2017 to January 30, 2019.

Enclosure 1 contains the R231 Owner's Activity Report.

This submittal contains no regulatory commitments. Should you have any questions concerning this letter, or require additional information, please contact Art Zaremba, Manager – Nuclear Fleet Licensing, at 980-373-2062.

Sincerely,

Kevin Ellis
Manager – Nuclear Support Services, H.B. Robinson Steam Electric Plant, Unit No. 2

Enclosure(s):
1. Ninety Day Owner's Activity Report for Refueling Outage 31

WEK

cc: (with enclosure)

Nate Jordan, NRC Project Manager, NRR
Catherine Haney, NRC Regional Administrator, Region II
NRC Resident Inspector, HBRSEP, Unit No. 2

ENCLOSURE 1

Ninety Day Owner's Activity Report
For Refueling Outage 31

Summary

The H. B. Robinson Nuclear Power Plant, Unit 2, Fifth Ten-Year Interval Inservice Inspection Plan was developed and prepared to meet the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, 2007 Edition with 2008 Addenda, and is subject to the limitations and modifications of 10 CFR 50.55a(b)(2), with the exception of design and access provisions and preservice examination requirements. This summary report is submitted pursuant to the reporting requirements of ASME Section XI as amended by ASME Code Case N-532-5, "Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission Section XI, Division 1." Contained within this summary report are the Owner's Activity Report, Form OAR-1, and Tables 1 and 2 of Code Case N-532-5 for H. B. Robinson Nuclear Power Plant during Cycle 31 and Refueling Outage 31 (R2R31). R2R31 is the last of two outages of the second period in the fifth inspection interval and includes the Repair/Replacement activities from June 13, 2017, to January 30, 2019.

Form OAR-1 OWNER'S ACTIVITY REPORT

Report Number: R2R31

Plant: H.B. Robinson Nuclear Station

Unit No.: 2 Commercial Service Date: 03/07/1971 Refueling Outage No.: R2R31

Current Inspection Interval: IWB, IWC,IWD, IWF: Fifth Interval IWE/IWL: Second Interval

Current Inspection Period:

IWB, IWC, IWD, IWF: Second Period of the Fifth Interval IWE/IWL: Third Period of the Second Interval

Edition and Addenda of Section XI applicable to the Inspection plans:

ISI: 2007 Edition Thru 2008 Addenda, IWE/IWL: 2001 Edition Thru 2003 Addenda

Date and Revision of Inspection Plans:

ISI: RNP-PM-008, Revision 9, 09/12/2018 IWE/IWL: RNP-PM-007, Revision 6, 11/30/2017

Edition and Addenda of Section XI applicable to Repair/Replacement activities, if different than the Inspection Plans: N/A

Code Cases used: N-639, N-731, N-722-1, N-716-1, N-729-4 N-770-2, N-586-1, N-532-5, N-600, N-648-1

CERTIFICATE OF CONFORMANCE

I certify that (a) the statements made in this report are correct; (b) the examinations and tests meet the Inspection Plan as required by the ASME Code, Section XI; and (c) the Repair/Replacement activities and evaluations supporting the completion of R2R31 (Refueling Outage Number) conform to the requirements of Section XI.

Signed: David Gatlin Date: 2/14/2019

Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of South Carolina and employed by OneCIS Insurance Company of Lynn MA have inspected the items described in this Owner's Activity Report, and state that, to the best of my knowledge and belief, the Owner has performed all activities represented by this report in accordance with the requirements of Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair/replacement activities and evaluation described in this report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this Inspection.

Elmostafa Elkouri Commissions NB 13930 SC 264 ANIC

Inspector's Signature National Board, State, Province, and Endorsements

Date: 02/14/19

Form OAR-1 OWNER'S ACTIVITY REPORT

Table 1

ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRED EVALUATION FOR CONTINUED SERVICE

Examination Category and Item Number	Item Description	Evaluation Description
Inservice Inspection Program		
F-A, F1.10C	116/RC-3-2403, Welded Spring Hanger	This condition was evaluated under EC#413734: Support RC-3-2403 was found to be lacking full thread engagement on a turnbuckle by approximately 2 threads. Pursuant to ASME Section XI, Part IWF-3122.3 this condition requires specific disposition to determine operability and potential ISI inspection scope expansion. This condition is documented in NCR 2234092. It was determined that support RC-3-2403 remained operable for the condition described in NCR 2234092. The support was returned to its original design configuration per calculation RC-3-2403 such that it meets the requirements of civil specification CPL-HBR2-C-011. No further action is required.
E-A, E1.11	L-DOME, Containment Dome Liner	Condition of the containment dome liner was reported in NCR#2235607. Blistering and peeling was identified in multiple areas on the dome liner however, the primer was still intact and no material wastage was identified. The coatings exempt log was updated under NCR 2235607 assignment 01. No further action is required.
E-A, E1.30	L-MB and L-MB Sump, Containment Moisture Barrier	This condition was evaluated under EC#413924: Joints in the concrete containment floor were inspected for adequate moisture barrier. Some areas inspected were identified as missing moisture barrier, lacking adhesion in the barrier, or degradation of the barrier in place as documented in AR 2235381. With respect to joints at the crane and inner missile walls and radial construction joints: The current configuration of the moisture barriers are largely judged to be effective, even though the field conditions are noted to differ from the approved design configuration. The moisture barriers in place to prevent moisture intrusion to inaccessible areas of the floor liner are in need of repair. However, given the field observations, construction details, and knowledge of corrosion potential, it is determined that the functionality of the floor liner panels are not challenged by corrosion due to degradation of the moisture barriers. Dry field conditions and the performance of the seals over several years without repairs indicate continued function between now and the next refueling outage. Repairs to the moisture barrier are to be implemented during RO32 to ensure continued function. With respect to joints in the cavity keyway: The joints within the reactor sump keyway are consistent with that shown on design drawings. No material moisture barrier consistent with definition of moisture barriers in ASME Section XI are applied. Degraded conditions noted are in relation to the concrete finish coat, which is managed under the degraded coatings log. CR 2241647 has been initiated to assess, manage, and correct deficient coatings as deemed necessary. No other actions are required and functionality of the floor liner panels are not challenged by moisture intrusion at the keyway sump.

Examination Category and Item Number	Item Description	Evaluation Description
Augmented	RPV Head Penetrations 101C/64, 65, 66, 23, and 28	This condition was evaluated under EC#413889: Debris from components above the Reactor Pressure Vessel (RPV) Head has obstructed 5 Nozzle Penetrations during the bare-metal visual examination of the RNP RPV Head per ASME Code Case N-729-4. Multiple attempts to remove the debris have been made, however penetrations 23, 28, 64, 65, and 66 still have debris in the crevice area obstructing approximately 10 to 15% of the circumference of the penetration. Chemical analysis of the debris showed negative for boric acid, however the 10 to 15% obstruction of the circumference of the penetration could potentially mask a relevant condition. The crevice area being obstructed from view on penetrations 23, 28, 64, 65, and 66 is not expected to be masking evidence of an adverse condition, particularly that of corrosion due to boric acid leakage. Chemical analysis of the debris has not only confirmed the absence of boric acid, but it has also helped validate the source of the debris to be a degraded silicone coating on components above the nozzle penetrations as noted in previous chemical analysis of debris in the RPV Head nozzle penetration crevices performed during past outages at RNP. All previous bare metal visual examinations of the RNP RPV Head have been satisfactory with no relevant conditions nor indications of boric acid leakage. There has been no known leakage as a result of PWSCC on any Alloy 690 RPV Head in the industry to date. Based on the completion of this exam as well as the examination coverage of 99.995% achieved, the ASME Code requirements for examination coverage have been satisfied.
Pressure Test Program		
NONE		

TABLE 2
ABSTRACT OF REPAIR/REPLACEMENT ACTIVITIES REQUIRED FOR CONTINUED SERVICE

Code Class	Item Description	Description of Work	Date Completed	Repair/Replacement Plan Number
1	101D/CRDM SSS	Arc strikes were removed from the CRDM Seismic Support Structure	10/17/18	20153937
1	108/04DM	Rounded PT indications were removed from pressurizer nozzle to safe end weld	10/6/18	20193596
1	109/SI-3-3135-ATT	Weld repair performed on Class 1 welded attachment	10/22/18	20286240
1	RC-525	Replace RC-525	10/30/18	20287364
2	V12-7	Weld Repair on V12-7 Travel Stop	10/24/18	20212353