

Ernest J. Kapopoulos, Jr. H B Robinson Steam Electric Plant Unit 2 Site Vice President

Duke Energy 3581 West Entrance Road Hartsville, SC 29550

> 0 843 857 1701 F 843 857 1319

Ernie.Kapopoulos@duke-energy.com

10 CFR 50.55a

Serial: RNP-RA/17-0051

JUN 29 2017

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

SUBMITTAL OF NINETY DAY INSERVICE INSPECTION SUMMARY REPORT

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 Inservice Inspection Summary Report for Class 1 and Class 2 pressure retaining components and their supports. This report has been prepared in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME), 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 30 and Refueling Outage 30 (R230). It is noted, R230 is the first of two outages of the second period in the fifth inspection interval and includes the repair/replacement activities from August 8, 2015 to June 12, 2017.

There are no regulatory commitments made in this submittal. If you have any questions regarding this submittal, please contact Mr. Tony Pilo, Manager – Nuclear Regulatory Affairs, at (843) 857-1409.

I declare under penalty of perjury that the foregoing is true and correct.

Executed On: 295uNE 207 Sincerely,

Ernest J. Kapopoulos, Jr. Site Vice President

United States Nuclear Regulatory Commission Serial: RNP-RA/17-0051 Page 2 of 2

EJK/am

Enclosure: Ninety Day Inservice Inspection Summary Report For Refueling Outage 30

cc: NRC Regional Administrator, NRC, Region II D. Galvin, NRC Project Manager, NRR (w/o Enclosures) NRC Resident Inspector, HBRSEP Unit No. 2

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

NINETY DAY INSERVICE INSPECTION SUMMARY

REPORT FOR REFUELING OUTAGE 30

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 30 and Refueling Outage 30 (R230). R230 is the first of two outages of the second period in the fifth inspection interval and includes the Repair/Replacement activities from August 8, 2015, to June 12, 2017.

Form OAR-1 OWNER'S ACTIVITY REPORT	
Report Number: <u>R230</u>	-
Plant: H.B. Robinson Nuclear Station	
Unit No.: 2 Commercial Service Date: 03/07/1971 Refueling Outage No.: R230	
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: Second 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-009, Revision 5, 12/19/2016 IWE/IWL: RNP-PM-007, Revision 5, 6/25/2014	
Edition and Addenda of Section XI applicable to Repair/Replacement activities, if different than the Inspection Plans:	<u>N/A</u>
Code Cases used: <u>N-639, N-731, N-722-1, N-770-1, N-586-1, N-532-5, N-600, N648-1</u>	
CERTIFICATE OF CONFORMANCE	
ASME Code, Section XI; and (c) the Repair/Replacement activities and evaluations supporting the completion of <u>R230</u> (Refueing Outage Number) Conform to the requirements of Section XI. Signed: <u>Declased</u> <u>MANAGER, ENG, PROGRE</u> Date: <u>6/14/2017</u> 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 Stat or Province of <u>South Carolina</u> and employed by <u>HSB Global Standards</u> of <u>Hartford CT</u> have Inspected the items described in the 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.	le his y
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.	Ne
Linspector's Signature Commissions NB 13930 SC 264 ANII A VIC National Board, State, Province, and Endorsements	
Date: 06/13/617	

Table 1

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

Category and Item Number	Item Description	Evaluation Description	
Inservice inspection Program			
F-A, F1.40	101D/CRDM SSS CRDM Seismic Support Structure	Inservice inspection Program Identified issues: 1. One of the CRDM Bumper screws does not fully engage the boss welded to the CRDM seismic support platform. 2. Several CRDM Bumper screws are missing the cotter pins shown on Westinghouse drawings. These locations are secured with wire that is intact and bent to prevent it becoming dislodged. The wire is not brittle or degraded. 3. Two locations have been identified on the Seismic Support Platform surface that contain what appear to be are strikes. From Westinghouse analysis #LTR-CHE-17-057, Rev. 0: "Westinghouse has determined that the CRDM bumper screw shown in Figures 1 and 2 is acceptable to use-as-is and recommends that the plant confirms the wire shown in Figures 5 and 6 does not come loose and become FME. If the plant feels these locations may come loose, Westinghouse recommends that these locations be replaced with a cotter pin or lock wire that can be confirmed to not come loose and become FME. Westinghouse recommends that are strike locations be blended, NDE inspected to confirm no cracks are present, and then touched-up using paint approved for use inside of containment to prevent future corrosion and protect the component. The AWS code requires that are strike locations be repaired as recommended by Westinghouse. The areas appear to be minor and therefore Westinghouse recommends that the plant repair areas deemed to be are strikes as determined by a qualified weld inspector, this outage or next outage." 1. The jam nut on the affected bumper has been validated to be snug. 3. Work Order #20153937 has been generated to remove the arc strikes during R231. The work order also contains a task for performance of visual and liquid penetrant examinations following removal to valida	

Form OAR-1 OWNER'S ACTIVITY REPORT			
Examination Category and Item Number	Item Description	Evaluation Description	
F-A, F1.10	123/CC, Rod Hanger	During examination of Component Support CPL-123-CC, it was identified that the pipe clamp bolting on the bottom side of the pipe had inadequate thread engagement. The bolt was not fully engaged into the nut by approximately one thread. The nut was not found to be loose, or have any apparent causes to have become loose during service, to cause the inadequate thread engagement. Evaluation EV-17-001 states the following: 3-CH-14 is the Charging Pump discharge to the Regenerative Heat Exchanger and is therefore part of the CVCS System. Per the system DBD, DBD/R87038/SD21, the CVCS safety function is making the core subcritical under hot standby or hot operating conditions and credible accident conditions, with appropriate margins for contingencies, and limiting any subsequent return to power such that there will be no undue risk to the health and safety of the public and providing RCP seal injection. However, a review of Chapter 15 of the UFSAR (15.4, 15.5, and 15.6) did not find any accident where operation of the charging pumps are credited in preventing or mitigating the consequences of an accident. It's therefore reasonable to conclude that the Chemical and Volume Control System does not perform a safety function as defined in the DBD and a mission time is not applicable. The hanger of concern (CPL-123-CC) is a deadweight rod hanger and is not credited for upset or emergency conditions of the charging line 3-CH-14 (Calc CH-13-7513B). Since the accident loads envelope deadweight loads, and the hanger remains in a functioning condition (i.e., bolt, nut and clamp are not failed), having one thread less than full thread engagement does not affect operability. SM Signature N. Roh 3/7/17 @ 1046	
		RE: NCR# 02105770, Evaluation EV-17-001	

Examination Category and Item Number	Evaluation Description					
Lategory and Item Number Description 105A/ECT Steam Generator Tubes B-Q, B16.20 105B/ECT Steam Generator Tubes	Steam Generator* Plugs The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively to bound a foreign object. The total number and percentage of tubes preventively tubes for the plugs and the plugs. The cumulative SG EFPY for RO27 was 21.8: 26.26. As of RO30, the Robinson steam generators h inspection after replacement. In total, the Robi since replacement. The worst case depth call of 49.5%TW or minimum d	tion outage for tion outage for abe was plugged plugged for wead oreign object. The B SG w Column 7 73 Colugged to data a SG 9 0 9 0.3 tr generator. Ing the results 2, RO28 was 2: ad operated 25. inson steam ged induced leakage r less for AVB P, 4350 psi, at 0 wed during the interved during the r less for FDB we P, 4350 psi, at 0 wed during the interved during the intervence during the i	on r each ac d in the B ar at a tub Three (3) C Row 37 30 31 29 29 e are: B SG 23 1 24 0.8 of tube p 3.27, RO: .39 EFPY enerators f ge integrity wear is su 0.95 proba inspection wear is suff 0.95 proba inspection	A SG and for support tubes in C SG Column 22 13 13 13 13 12 12 13 13 12 12 13 13 12 12 13 13 12 12 13 13 12 12 13 13 12 12 13 13 13 12 13 13 13 12 13 13 13 12 13 13 13 12 13 13 13 12 13 13 13 13 12 13 13 13 13 13 13 13 13 13 13 13 13 13	adation five (5) tub plate. Two SG were SG were SG sere SG were SG sere in-situ pro .67, and R e first in-ser ted 26.26 H nonstrated o demonstrated o demonstrate o demonstrate <t< th=""><th>essure O(2) plugge essure O30 w ervice EFPY for AV rate a affidence of ate a affidence of</th></t<>	essure O(2) plugge essure O30 w ervice EFPY for AV rate a affidence of ate a affidence of

		Form OAR-1 OWNER'S ACTIVITY REPORT			
Examination Category and Item Number	Item Description	Evaluation Description			
	Pressure Test Program				
B-P, B 15.10 (Bolted connection examination)	EST-083-1, PS-953A	Approximately 1/4 teaspoons of dry white boric acid at tee fitting. No active leakage. Disassembled fittings, cleaned and inspected in accordance with AD-EG-PWR-1611, reassembled fittings. Reference: WR 20063109 WO 20150358 NCR 2106135.			
B-P, B15.10 (Bolted connection examination)	EST-083-1, LX-511AA	Approximately 1/4 teaspoons of dry white boric acid at tee fitting at top of bellows. No active leakage. Cleaned and inspected in accordance with AD-EG-PWR-1611. Reference: WR 20063111 WO 20150361 NCR 2106135			
B-P, B 15.10 (Bolted connection examination)	EST-083-1, RC-536	Approximately 1/4 Teaspoons of dry white boric acid at flange mating surface. Not in contact with body to bonnet studs. No active leakage. Cleaned and inspected in accordance with AD-EG-PWR-1611. Reference: WR 20063112 WO 20150362 NCR 2106135			
B-P.B15.10 (Bolted connection examination)	EST-083-1, PCV-455A	Approximately 1/2tsp of dry white-blueish boric acid at the packing area. No active leakage. Cleaned and inspected in accordance with AD-EG-PWR-1611. Reference: WR 20063115 WO 20150363 NCR 2106135			
B-P, B 15. 10 (Bolted connection examination)	EST-083-1, RHR-750	2 TBSP, DRY WHITE BORIC ACID AT THE PACKING AREA. NO ACTIVE LEAKAGE. Cleaned and inspected in accordance with AD-EG-PWR-1611. Reference: WR 20063121 WO 20150364 NCR 2106135			
С-Н, С7.Ю	EST-078. S1-898C	Dry white boric acid at packing 1-1/2 tsp. No Active Leakage. Cleaned and inspected in accordance with AD-EG-PWR-1611. Reference: WR 20029555			
C-H.C7.10	EST-078, SI-898J	Dry white boric acid at packing 2 tsp. No Active Leakage. Cleaned and inspected in accordance with AD-EG-PWR-1611. Reference: WR 20029556			
C-H, C7.10	EST-078, S1-888L	Dry white boric acid at packing 1-1/2 tsp. No Active Leakage. Cleaned and inspected in accordance with AD-EG-PWR-1611. Reference: WR 20029557			
C-H, C7.10	EST-078, SI-PUMP-B	5.4 ml/min leak observed at pump casing flange. Middle section of the casing on east-side, look south. No leakage observed when the pump was secured. B-SI-Pump is Normally Out of Service equipment "Swing Pump". Reference: WO 20028658/WO 20035437, NCR 1966533 Attribute 3 OPER/FUNC and Assgn 02. Reference EC 82347R1(EC 282347R1).			
С-Н, С7. Ю	EST-078, SI-898G	Dry white boric acid on the valve packing. Less than 1 tsp on packing. No other components affected. Clean and inspect in accordance with AD-EG-PWR-1611. Reference: WR 20029555			
С-Н, С7.Ю	EST-078, SI-898H	Dry white boric acid on the valve packing. Less than 1 tsp on packing. No other components affected. Clean and inspect in accordance with AD-EG-PWR-1611. Reference: WR 20029561			
C-H, C7. 10	EST-078, SI-895P	Dry white boric acid on the valve packing. Less than 1 tsp on packing. No other components affected. Clean and inspect in accordance with AD-EG-PWR-1611.Reference: WR 20029562			
D-B, D2.10	EST-084, SFPC-742	VT-1 exam of removed stud due to boric acid in contact with stud at body to body connection. VT- 1 stud exam was satisfactory. Reference WO 13379359 Task 01, 03 and NCR 682334.			
С-Н, С7.Ю	EST-078, SI-895A	Dry white boric acid on the valve packing. Less than 1 tsp on packing. No other components affected. Clean and inspect in accordance with AD-EG-PWR-1611.Reference: WR 20029563			
С-Н, С7. Ю	EST-091, LT-969	LT-969: Approximately 1 tsp. Dry white boric acid observed at the fitting region. No active leakage or degradation reported. Clean and inspect in accordance with the boric acid program, attachment 3, AD-EG-PWR-1611. Reference: WR 20004481			
D-B, D2.10	EST-084, SFPC-742	VT-1 exam of removed stud due to boric acid in contact with stud at body to body connection. VT- I stud exam was satisfactory. Reference WO 13379359 Task 01, 03 and NCR 682334.			
С-Н, С7. Ю	EST-078, SI-895A	Dry white boric acid on the valve packing. Less than 1 tsp on packing. No other components affected. Clean and inspect in accordance with AD-EG-PWR-1611.Reference: WR 20029563			
С-Н.С7.Ю	EST-091, SI-838D	SI-838D: Approximately 1 tsp. Dry white boric acid observed at the bonnet. No active leakage or degradation reported. Non-bolted connection. Clean and inspect in accordance with the Boric Acid Program, Attachment 3, AD-EG-PWR-1611. Reference: WR 20004482			
С-Н, С7. Ю	EST-091, SI-838H	SI-838H: Approximately 1 tsp. Dry white boric acid observed at the fitting region. No active leakage or degradation reported. Clean and inspect in accordance with the Boric Acid Program, Attachment 3, AD-EG-PWR-1611. Reference: WR 20004483			
С-Н, С7. Ю	EST-091, SI-892G	SI-892G: Approximately 1 tsp. Dry white boric acid observed at the packing region. No active leakage or degradation reported. Clean and inspect in accordance with the Boric Acid Program, Attachment 3, AD-EG-PWR-1611. Reference: WR 20004485			

Examination Category and Item Number	Item Description	Evaluation Description	
С-Н, С7. Ю	EST-091, SI-871	S1-871: Approximately 1 tsp. Dry white boric acid observed at the bonnet region. No active le or degradation reported. Bonnet bolting not affected. Clean and inspect in accordance with the Boric Acid Program, Atlachment 3, AD-EG-PWR-1611.WR 20004486	
С-Н, С7. Ю	EST-127, CVC-304C	EST- 127 item. Inactive dry, white boric acid approx 1/4 tsp at packing. Clean and inspect in accordance with AD-EG-PWR-1611 BACCP. Reference: WR 20061707 WO 20147572 NCR 2100362	
С-Н, С7. Ю	EST-127, CVC-304D	EST-127 item. Inactive dry, white boric acid approx. 1/8 tsp at packing. Clean and inspect in accordance with AD-EG-PWR-1611 BACCP. Reference: WR 20061708 WO 20147571 NCR 2100362	
С-Н, С7. Ю	EST-127, CVC-304L	EST-127 item. Inactive dry, white boric acid approx. 1/2 tsp at packing. Clean and inspect in accordance with AD-EG-PWR-1611 BACCP. Reference: WR 20061709 WO 20147404 NCR 2100362	
С-Н, С7.10	EST-129, SI-875J	EST-129 item. Inactive dry, white boric acid approx. 3/4 tsp at packing. Clean and inspect in accordance with AD-EG-PWR-1611 BACCP. Reference: WR 20061710 WO 20147394 NCR 2100369.	
С-Н, С7.10	EST-129, SI-865B	EST-129 item. Inactive dry, white boric acid approx. 3/4 tsp at packing. Clean and inspect in accordance with AD-EG-PWR-1611 BACCP. Reference: WR 20061711 WO 20147381 NCR 2100369.	
C-H, C7.10	EST-129, SI-851A	EST-129 item. Inactive dry, white boric acid approx. 1 tbsp at packing. Clean and inspect in accordance with AD-EG-PWR-1611 BACCP. Reference: WR 20061713 WO 20147407 NCR 2100369.	
B-P, B15.10	EST-083-2, PS-956G/C	 PS-956G: EST-083-2 item. Wetted boric acid droplets collected at the tubing to fitting connection of PS-956G. Residue is localized at the tubing. Clean and inspect per AD-EG-PWR-1611. During repair of PS-956C (NCR 2113939) it was determined the leak indications present on PS-956B/PS-956G was a result of spray from PS-956C. Following repair of PS-956C, PS-956B/PS-956G were also retested with no leakage identified. PS-956C: during the performance of OST-909 step 7.2.5 a leak of approximately one gallon per minute was discovered on PS-956C on the union between the pipe and the valve. Located leaking fitting. Tightened Swagelok nut approx. 1 full turn. Reference: WO 20157817/WO 20157797(PS-956C). NCR 2114167 / NCR 2113955 Attribute 3A OPER/FUNC and NCR 2113939 (PS-956C). 	
B-P, B15.10	EST-083-2, PS-956B	PS-956B: EST-083-2 item. Wetted boric acid droplets collected at the tubing to fitting connection of PS-956B. Residue is localized at the tubing. Clean and inspect per AD-EG-PWR-1611. During repair of PS-956C (NCR 2113939) it was determined the leak indications present on PS-956B/PS- 956G was a result of spray from PS-956C. Following repair of PS-956C, PS-956B/PS-956G were also retested with no leakage identified. WO 20157814 NCR 2114167 / NCR 2113954 Attribute 3A OPER/FUNC and NCR 2113939 (PS-956C)	
B-P, B15.10	EST-083-2, Seal Table Det. H-13	EST-083-2 item. Detector was identified to have 1 teaspoon buildup of dry boric acid at detector fitting assembly. No active leak reported. Perform clean and inspection in accordance with AD-EG-PWR-1611 ATT. 3. Reference: WO 20157829 NCR 2114167.	
B-P, B15.10	EST-083-2, SI-865B	EST-083-2 item. 1/2 teaspoon dry white boric acid at packing gland. No active leak observed. Perform cleaning and inspection task in accordance with AD-EG-PWR-1611 ATT. 3. WO 20157826 NCR 2114167.	
B-P, B15.10	EST-083-2, RC-575	A 1/4 tsp of dry boric acid on the outlet flange of RC-575 not in contact with the bolts. Clean and inspect in accordance with AD-EG-PWR-1611 BACCP ATT. 3 is required. WO 20157812 NCR 2114167	
B-P, B15.10	EST-083-2, RC-591 Fitting	A leak of approximately 50 drops per minute was discovered at tubing adaptor to rc-591 fitting during the EST-083-2 walkdown. Tightened fitting to stop leak. WO 20157800 NCR 2114167 and NCR 2113953.	

The above Engineering Surveillance Tests and all exceptions were addressed by the normal work request process, corrective action program and retained as permanent records, as required, which may be obtained through Duke Energy Progress, Inc., Document Control Services.

Code Class	Item Description	Description of Work	Date Completed	Repair/Replacement Plan Number
1	RC-551A	Replace Valve Disc and Nozzle	3/6/2017	20015491-01
1	RPV Closure Head Nut	Replace Closure Head Nut	3/23/2017	20015540-01
1	Steam Generator "B"	Install Plug in One Steam Generator Tube	3/14/2017	20016428-09
1	Steam Generator "C"	Install Plug in Five Steam Generator Tubes	3/14/2017	20016375-09
1	RC-3-2404 RC-3-2405 RC-3-2406	Repair Welded Support Attachments	8/30/2016	2054449-01
2	RHR-PUMP-B	Replace Casting / Stuffing Box Extension	8/24/2015	13329230-01
2	CH-13-5000	Replace Failed Bolt	11/24/2015	13388608-01
2	BA-TNK-A-HTR-B	Replace Flange Bolting	9/13/2016	13542966-01
2	RHR-782	Replace Valve Disc	3/12/2017	20016577-01
3	CVC-336	Replace Valve Bonnet	3/8/2017	13346958-01

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

Note: Table 2 repair replacement activities required for continued service include all activities from 08/18/2015 up to and including 06/12/2017. Any repair replacement documentation closed after 6/12/2017 will be documented in the next OAR-1 Owner's Activity Report.