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RA-22-0255  
August 29, 2022

10 CFR 50.55a

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Oconee Nuclear Station, Unit 3  
Docket No. 50-287  
Renewed License No. DPR-55

Subject: Oconee Unit 3, Refuel 31 (O3R31) Inservice Inspection (ISI) Report, Fifth 10-Year ISI Interval

Pursuant to the 2007 Edition through the 2008 Addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, IWA-6000, Duke Energy Carolinas, LLC is providing its Inservice Inspection (ISI) summary pertaining to the 31<sup>st</sup> refueling outage (O3R31) for Oconee Nuclear Station (ONS) Unit 3.

The Enclosure to this letter contains the O3R31 ISI summary report.

This submittal contains no regulatory commitments. Please refer any questions regarding this submittal to Ryan Treadway, Director – Nuclear Fleet Licensing, at 980-373-5873.

Sincerely,

A handwritten signature in black ink that reads "Shawn K. Gibby". The signature is fluid and cursive.

Shawn K. Gibby  
Vice President – Nuclear Engineering

JLV

Enclosure: Inservice Inspection Summary Report Unit 3 Oconee Spring 2022 Refueling Outage O3R31 (Outage 4)

cc: (with Enclosure)

Ms. Laura Dudes  
Administrator, Region II  
U.S. Nuclear Regulatory Commission  
Marquis One Tower  
245 Peachtree Center Avenue NE, Suite 1200  
Atlanta, GA 30303-1257

Mr. Shawn Williams  
NRC Senior Project Manager  
Oconee Nuclear Station

Mr. Jared Nadel  
NRC Senior Resident Inspector  
Oconee Nuclear Station

Enclosure to  
RA-22-0255

**Enclosure**

**Inservice Inspection Summary Report Unit 3 Oconee Spring 2022 Refueling Outage  
O3R31 (Outage 4)**

**DUKE ENERGY**

**INSERVICE INSPECTION SUMMARY REPORT UNIT 3 OCONEE SPRING 2022  
REFUELING OUTAGE  
O3R31 (Outage 4)**

**Location: Highway 130/183, Seneca, SC 29672**

**NRC Docket No. 50-287**

**Commercial Service Date: December 16, 1974**

**Owner: Duke Energy  
526 South Church St.  
Charlotte, NC 28201-1006**

**Revision 0**

<b>Originated By:</b>	<i>Austin C. Keller</i> Digitally signed by ACKell1 (365600) Date: 2022.08.10 15:51:04 -04'00'	<b>Date</b> _____
<b>Checked By:</b>	Austin C. Keller <i>Angela Staller</i> Digitally signed by E50268 (342024) Date: 2022.08.10 16:09:49 -04'00'	<b>Date</b> _____
<b>Approved By:</b>	MAP9681 (102140) <i>Angela Staller</i> Digitally signed by MAP9681 (102140) Date: 2022.08.11 15:40:04 -04'00'	<b>Date</b> _____

Mark A. Pyne

**FORM OAR-1 OWNER'S ACTIVITY REPORT**

Report Number \_\_\_\_\_ Owner's Activity Report for Refueling Outage O3R31

Plant \_\_\_\_\_ Oconee Nuclear Station, Highway 130/183, Seneca, SC 29672

Unit No. 3 Commercial service date 12/16/1974 Refueling outage no. O3R31  
(if applicable)

Current inspection interval Fifth Inspection Interval (ISI), Third Inspection Interval (Containment ISI)  
(1st, 2nd, 3rd, 4th, other)

Current inspection period Second & Third Inspection Period (ISI) & Third Inspection Period (Containment) – See Attachment A for details  
(1st, 2nd, 3rd)

Edition and Addenda of Section XI applicable to the inspection plans ASME Section XI 2007 Edition through 2008 Addenda

Date and revision of inspection plans See Attachment A

Edition and Addenda of Section XI applicable to repair/replacement activities, if different than the inspection plans Same as above

Code Cases used for inspection and evaluation: The following Code Cases are permitted by the Augmented ISI, ISI, and Pressure Test Plans, 5th Interval: N-513-3, N-513-4, N-532-4, N-532-5, N-586-1, N-600, N-613-1, N-613-2, N-639, N-643-2, N-648-1, N-648-2, N-651, N-663, N-705, N-706-1, N-711-1, N-712, N-716-1, N-722-1, N-729-6, N-731, N-735, N-765, N-770-5, N-771, N-775, N-776, N-786-1, N-798, N-800, N-805, N-823, N-823-1, N-825, N-831, N-843, N-845, N-853, & N-854  
(if applicable)

**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 O3R31 conform to the requirements of Section XI.  
(refueling outage number)

Signed *Austin C. Keller* Digitally signed by ACKell1 (365600) Date: 2022.08.16 12:46:40 -04'00' Austin C. Keller, ISI Program Owner Date 08/16/2022

**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 Bureau Veritas Inspection and 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.

MEZurbu (285214) dc=com, dc=duke-energy, dc=ent, dc=nam, ou=Accounts, ou=Personal, ou=PNTransitional, cn=MEZurbu (285214), email=Mark.Zurbuch@duke-energy.com 2022.08.16 12:51:27 -04'00'

Inspector's Signature  
**Mark E. Zurbuch**

Commissions 13048, 201, AI, IS, N, I, C, R  
National Board, State, Province, and Endorsements

Date 8/16/22

**Attachment A**

**Oconee Unit 3 Refueling Outage 31, Inservice Inspection Report**

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The Oconee Nuclear Station Unit 3 Fifth Ten Year Inservice Inspection (ISI) Plan complies with 10CFR50.55a(g), which implements, by reference, the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 2007 Edition with 2008 Addenda.

- Per RIS 2004-12, Letter RA-20-0262, NRC Accession Number ML20260H325 and approval NRC Accession Number ML20300A206, the NRC staff concluded that the use of subparagraph IWA-4540(b) of the 2017 Edition of the ASME B&PV Code, Section XI, is acceptable for Oconee Unit 3.
- Per RIS 2004-16, Letter RA-20-0263, NRC Accession Number ML20260H326 and approval NRC Accession Number ML21113A013, the NRC staff concluded that the use of subparagraph IWA-4340 of the 2017 Edition of the ASME B&PV Code, Section XI, is acceptable for Oconee Unit 3.
- Per RIS 2004-12, Letter RA-20-0191, NRC Accession Number ML20265A028 and approval NRC Accession Number ML21029A335, the NRC staff concluded that the use of paragraphs IWA-5120, IWA-5213, IWA-5241, IWA-5242, and IWA-5250 of the 2017 Edition of the ASME B&PV Code, Section XI, is acceptable for Oconee Unit 3.

This summary report is being submitted pursuant to the reporting requirements of ASME Section XI, IWA-6000 as amended by ASME Code Case N-532-5, "Repair/Replacement Activity Documentation Requirements and Inservice Inspection Summary Report Preparation and Submission Section XI, Division 1".

Contained within this summary report are the form OAR-1 (Owner's Activity Report) and Tables 1 and 2 of Code Case N-532-5 for Oconee Nuclear Station during cycle 31 and Refueling Outage 31 (O3R31). O3R31 is the first outage of the third ISI period in the fifth inspection interval. For ISI examinations Period 2 was extended by 12 months (as permitted by IWA-2430(c)(3)) to 07/15/2022. This allowed for selected examinations performed during outage O3R31 to be credited for Period 2 compliance. A "placeholder" outage (O3R31a) was added to Period 2 to track the scheduling and completion of examinations performed during O3R31 that are to be credited for Period 2. Only those examinations scheduled for O3R31a shall be credited for Period 2 compliance. In no case was any one exam credited for both periods.

For Containment ISI examinations O3R31 is the first outage of the third Containment period in the third inspection interval.

This report includes all Repair/Replacement activities from May 10, 2020 through May 30, 2022, Cycle 31.

**Date and Revision of Inservice Inspection Plans:**

**I. Fifth Interval Inservice Inspection Plans**

1. The following documents comprise the Oconee Nuclear Station 5<sup>th</sup> Interval Inservice Inspection Plan for ONS Unit 3 (Class 1, 2, and 3 Components):
  - a. ISI Plan - Fifth Interval Inservice Inspection Plan, Oconee Nuclear Station Units 1, 2, & 3 and Keowee Hydro Station Units 1 & 2, Document #OISI-0169.10-0050-ISI PLAN, Rev. 1, dated 2/22/2021.

- b. ISI Schedule – Fifth Ten-Year Interval Inservice Inspection Schedule Oconee Nuclear Station Unit 3, Document #OISI-0169.10-0050-Unit 3, Rev. 1, dated 2/26/2021.
2. The following document comprises the Oconee Nuclear Station 5<sup>th</sup> Interval Inservice Inspection Pressure Test Plan for ONS Unit 3:
- a. Oconee Nuclear Station - Fifth Inspection Interval Inservice Inspection PT (Pressure Test) Plan General Requirements Units 1, 2, and 3, Document #OISI-0169.20-0050-PTPLAN, Rev. 8, dated 7/21/2022.

**II. Fifth Interval Augmented Inservice Inspection Plan**

1. The following document comprises the Oconee Nuclear Station 5<sup>th</sup> Interval Augmented Inservice Inspection Plan and Schedule for Unit 3:
- a. Oconee Nuclear Station - Augmented Inservice Inspection NDE Plan - General Requirements and Units Detail Listing, Document #OISI-0169.10-0050 - AUG-ISI, Rev. 7, dated 1/19/2021.

**III. Third Interval Containment Inservice Inspection Plan**

1. The following document comprises the Oconee Nuclear Station 3<sup>rd</sup> Interval Containment Inservice Inspection Plan for Unit 3 (Class MC):
- a. Third Interval Containment Inservice Inspection Plan Oconee Nuclear Station Units 1, 2, & 3, Document #O-ISIC3-62-0001, Rev. 9, dated 05/1/2022.

TABLE 1  
ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT REQUIRED EVALUATION FOR  
CONTINUED SERVICE

Examination Category and Item Number	Item Description	Evaluation Description
C-H / C7.10	Boric acid residue was found during ISI Pressure Test Zone, O3HPI-2A	Areas identified in NCR #02428399 were evaluated by Engineering and found to be acceptable.
C-H / C7.10	Boric acid residue was found during ISI Pressure Test Zone, O3HPI-2B	Areas identified in NCR #02428404 were evaluated by Engineering and found to be acceptable.
C-H / C7.10	Relevant conditions were identified during ISI Pressure Test Zone, O3RCMU-1	Areas identified in NCR #02428080 were inspected and resolved per WO 20537520.
C-H / C7.10	Boric acid residue was found during ISI Pressure Test Zone, I3HPI-4	Areas identified in NCR #02366873 were evaluated by Engineering and found to be acceptable.
C-H / C7.10	Boric acid residue was found during ISI Pressure Test Zone, I3HPI-7	Areas identified in NCR #02367446 were evaluated by Engineering and found to be acceptable.
C-H / C7.10	Boric acid residue was found during ISI Pressure Test Zone, I3RBS-1	Areas identified in NCR #02374063 were evaluated by Engineering and found to be acceptable.
C-H / C7.10	Boric acid residue was found during ISI Pressure Test Zone, I3HPI-1	Areas identified in NCR #02374413 were evaluated by Engineering and found to be acceptable.
C-H / C7.10	Boric acid residue was found during ISI Pressure Test Zone, I3LPI-1	Areas identified in NCR #02379143 were evaluated by Engineering and found to be acceptable.
D-B / D2.10	Boric acid residue was found during ISI Pressure Test Zone, I3SF-2	Areas identified in NCR #02375976 were evaluated by Engineering and found to be acceptable.
E-C / E4.11	ISI Summary No. O3-08773. VT-1 examination of 3-SCV-011 revealed pitting of the liner plate exceeding 10% nominal wall loss.	Indications identified in NCR #02426502 were evaluated by Engineering and found to be acceptable for continued service per IWE-3122.3. The liner plate in this area was re-coated during O3R31 per WO 20208696.



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

<b>Code Class</b>	<b>Item Description</b>	<b>Description of Work</b>	<b>Date Completed</b>	<b>Repair / Replacement Plan Number</b>
3	U3 CCW Inlet piping	Encapsulate wall thinning per IWA-4340 2017 Edition – Reference RA-20-0263	5/17/2022	20395451-01
3	0FO-FL-004B	Perform weld repair of cracked filter bracket support	6/18/2020	20405673-02
3	0LPS-FL-0027	Replace cuno filter housing due to crack	10/1/2020	20426301-01
3	U3 CCW Inlet piping	Remove defect and encapsulate through wall hole	5/20/2022	20476280-45
1	3RC-HX-000A	Plug SG tubes	5/16/2022	20476408-17
1	3RC-HX-000B	Plug SG tubes	5/16/2022	20476409-17
3	3RC-HX-0018 piping	Replace piping/fittings due to through wall leak	5/24/2022	20535005-01