

## INSPECTION PLAN

### DC Cook U2 - Inservice Inspection Activities

Inspection Report Number 50/31<sup>6</sup>~~5~~-2018002


#### Inspection Objectives/Focus

IP-71111.08- Inservice Inspection - This inspection fulfills the baseline inspection program requirements for the biennial review of the inservice inspection (ISI) activities. The inspection objectives are to verify that the program for monitoring degradation of the reactor coolant system boundary, risk - significant piping system boundaries, and the containment boundary are effective. This objective will be accomplished by direct observation of non-destructive examinations, review of records and interviews of ISI personnel associated with inspection and repair of Code components. The selection of components and level of effort will be aligned to the extent practical with the percentages identified in each cornerstone identified for this procedure.

Cornerstones: Initiating Events (50%), Barrier Integrity (50%).

Onsite Inspection Dates: March 5<sup>th</sup> 2018 – April 13<sup>th</sup> 2018

Inspection Procedures: IP 71111-08 – Inservice Inspection Activities

Prepared By:  2/26/18  
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Approved By:  2/27/18  
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Reviewed By:  2/27/18  
K. Riemer, Branch Chief, DRP, Branch 2

## INSPECTION PLAN DETAILS

I Inspectors: L Smith and M Holmberg (and two NRR Observers: David Ruddland, Arley Huser)

### II Inspection Schedule

- **Information Request Issue Date:**
  - January 10, 2018.
- **In-Office Preparation Dates:**
  - February 26, 2018 – March 2, 2018
- **Date for Entrance and Exit Meetings:**
  - Entrance – March 5, 2018 - Monday.
  - Exit – TBD (Dependent on baffle bolt status)
- **Target for Draft Report Input to Branch Chief:**
  - Two weeks post-exit.

III Specific Inspection Activities:

IP 7111108 Section	Requirement	Activity Review Targets																												
02.01(a)-(c)  (50 hrs)	<p>Review a sample of nondestructive examination (NDE) activities. The review sample should consist of:</p> <ol style="list-style-type: none"> <li>1. Two or three types of NDE activities</li> <li>2. Order of preference for reviewed NDE activities:               <ol style="list-style-type: none"> <li>(a) Volumetric examinations</li> <li>(b) Surface examinations</li> <li>(c) Visual examinations</li> </ol> </li> </ol> <p>For each NDE activity reviewed, perform the following through either direct observation (preferred method) or record review:</p> <ol style="list-style-type: none"> <li>1. Verify that the activities are performed in accordance with ASME Boiler and Pressure Vessel Code requirements or industry augmented inspection requirements.</li> <li>2. Verify that indications and defects, if present, are appropriately dispositioned in accordance with the ASME Code, licensee procedures and NRC requirements.</li> </ol>	<p><u>3/7/2018</u></p> <table border="1" data-bbox="993 383 1990 440"> <tr> <td>55499763-13</td> <td>2-FW-78-09F</td> <td>PIPE TO PIPE</td> <td>2</td> <td>UT</td> <td>3/7/18</td> </tr> <tr> <td>55499763-13</td> <td>2-FW-78-10S</td> <td>PIPE TO TEE</td> <td>2</td> <td>UT</td> <td>3/7/18</td> </tr> </table> <p>As a backup: <u>3/8/2018</u></p> <table border="1" data-bbox="993 574 1990 631"> <tr> <td>55499766-06</td> <td>2-RC-28-16</td> <td>PIPE TO ELBOW</td> <td>1</td> <td>UT</td> <td>3/8/18</td> </tr> <tr> <td>55499766-06</td> <td>2-RC-28-17</td> <td>ELBOW TO PIPE</td> <td>1</td> <td>UT</td> <td>3/8/18</td> </tr> </table> <p>3/16/18 VT-3</p> <table border="1" data-bbox="982 732 1990 813"> <tr> <td>55467355-04</td> <td>PERFORM BAFFLE Edge bolts VT-3</td> <td>16-Mar-18 04:00</td> <td>16-Mar-18 22:00</td> </tr> </table>	55499763-13	2-FW-78-09F	PIPE TO PIPE	2	UT	3/7/18	55499763-13	2-FW-78-10S	PIPE TO TEE	2	UT	3/7/18	55499766-06	2-RC-28-16	PIPE TO ELBOW	1	UT	3/8/18	55499766-06	2-RC-28-17	ELBOW TO PIPE	1	UT	3/8/18	55467355-04	PERFORM BAFFLE Edge bolts VT-3	16-Mar-18 04:00	16-Mar-18 22:00
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55467355-04	PERFORM BAFFLE Edge bolts VT-3	16-Mar-18 04:00	16-Mar-18 22:00																											
02.01d  (0hrs)	Review one or two surface or volumetric examinations from the previous outage with recordable indications that have been accepted by the licensee for continued service. Verify that the licensee's acceptance for	None identified by the licensee.																												

	continued service was appropriate, and in accordance with the ASME Code or NRC approved alternative.							
02.01e  (16 hrs)	If applicable, for modifications, repairs, or replacements consisting of welding on pressure boundary risk significant systems, verify for one to three welds that the welding activities, and any applicable NDE performed, were performed in accordance with ASME Code requirements, or an NRC approved alternative.	<table border="1"> <thead> <tr> <th>Welding</th> <th>WO#</th> <th>Description and weld numbers</th> </tr> </thead> <tbody> <tr> <td>Class 3</td> <td>55503076-01</td> <td>2-WPX-736-V1 Replace valve/Pipe</td> </tr> </tbody> </table>	Welding	WO#	Description and weld numbers	Class 3	55503076-01	2-WPX-736-V1 Replace valve/Pipe
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02.02  0 hours	<p>PWR Upper Head Penetration Inspection</p> <p>Licensee has scheduled a bare metal visual and nonvisual examination of the reactor vessel head.</p> <p>a. For these exams, inspectors will review the examination procedure; and either observe portions of these examinations, and/or review the post examination records to confirm they are consistent with Code Case N-729-4 and 10 CFR 50.55a(g)(6)(ii)(D).</p> <p>If welding repairs are needed and completed on upper head penetrations, the inspectors will review a sample of these repairs. Verify that the welding process and welding examinations were performed in accordance with ASME Code requirements and 10 CFR 50.55a(g)(6)(ii)(D) or an NRC approved alternative.</p>	Alloy 690 Replaced Head. No Head Inspections required this outage.						
02.03  (6hrs)	<p>Boric Acid Corrosion Control (BACC) ISI</p> <p>a. (Resident Inspectors) Review a sample of</p>	Interview resident inspectors to get insights from their observations of BACC walkdowns.						

	<p>Boric Acid Corrosion Control (BACC) walkdown visual examination activities through direct observation.</p> <p>b. Verify that visual inspections emphasizes locations where boric acid leaks can cause degradation of safety significant components.</p> <p>c. Review one to three engineering evaluations performed for boric acid found on RCS piping and components. In addition, verify that degraded or non-conforming conditions are identified properly in licensee in licensee's corrective action system.</p> <p>d. Review one to three corrective actions performed for evidence of boric acid leaks identified, if available during the time frame of this inspection. Confirm that these corrective actions were consistent with requirements of the ASME Code and 10 CFR 50 Appendix B Criterion XVI.</p>	<p>Look for boric acid deposits during NDE observations in containment. Confirm licensee has identified and documented boric acid leaks and perform reviews of site procedures and review site evaluations of components affected by boric acid.</p> <p>Selected samples from condition reports (ARs) related to boric acid leakage to followup on licensee evaluations and corrective actions.</p>
<p>02.04  (0 hrs)</p>	<p>Steam Generator (SG) Tube ISI</p> <p>Verify that qualified equipment is used for the active or anticipated tube damage mechanisms. Verify that examination scope is consistent with TS and EPRI guidance. Verify that licensee is applying appropriate screening criteria on degraded tubes that could challenge the SG tube performance criteria. (i.e., operational leakage, structural integrity, or accident leakage). Observe any tubes which require pressure testing. Review any trends for primary-to-secondary leakage, or reported potential degraded condition due to SG design, water chemistry, material properties, or newly identified degradation mechanisms.</p>	<p>No steam generator tube inspections are planned.</p>

<p>02.05 (26 hrs)</p>	<p><b>Identification and Resolution of Problems.</b> Verify that the licensee is identifying ISI problems at an appropriate threshold and entering them in the corrective action program. Determine whether the licensee's procedures direct the licensee to perform a root cause evaluation and take corrective actions when appropriate. For a selected sample of problems associated with inservice inspection and steam generator inspection documented by the licensee, verify the appropriateness of the corrective actions. See Inspection Procedure 71152, "Identification and Resolution of Problems," for additional guidance. In addition, a licensee's evaluation of industry operating experience can be critical. Determine whether licensees are correctly assessing the applicability of operating experience to their respective plants.</p>	<p>Observe sample of baffle former bolt replacement activities.</p> <p>Review a sample of corrective action records related to ISI, foreign materials intrusion into safety related systems, or materials degradation of Code components. The inspectors review will include site evaluation of operating experience related to baffle-former bolts and a copy of the proposed or completed corrective actions records associated with these evaluations. In particular, Cook U2 is a tier 1 plant (Highest susceptibility bin) with type 347 SS bolts operated in the down-flow configuration as identified in Nuclear Safety Advisory Letter (NSAL)-16-1 "Baffle-Former Bolts." The inspectors will review to determine if the licensee has evaluated the NSAL-16-1 and has taken or assigned actions consistent with this document.</p> <p>The inspectors will document this review and the results in accordance with the latest revision to the ISI template. Review corrective actions for defective baffle former edge bolts and the baffle assembly upflow conversion.</p>
<p>Total 98 hrs</p>		

**IV) Completion Status**

The baseline ISI procedure 7111108 will be completed for Unit 2 with one sample as defined by reviews above.

**V) Resource Estimate**

IP 71111.08 reviews will take approximately 98 hours, but is highly variable based on logistical challenges in observing these examinations and the additional scope necessary to cover baffle former bolt repairs which will likely result in exceeding the upper end of 100 hours identified within this IP. Overtime will be requested and likely needed to support observation of examinations outside scheduled work hours.