

PRD30669



MRP Materials Reliability Program _____ MRP 2016-008

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To: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-001

From: Bernie Rudell, Exelon, MRP Integration Chairman
Anne Demma, EPRI, MRP Program Manager

Subject: Biennial Report of MRP-227-A Reactor Internals Inspection Results

The purpose of this letter is to provide NRC staff members with a report of recent pressurized water reactor (PWR) utility inspection results as required by the Pressurized Water Reactor Internals Inspection and Evaluation Guidelines (MRP-227-A). Previous results were provided in EPRI letter MRP-2014-006.

Enclosed with this document are individual plant MRP-227-A inspection summary results from 2014-2015 using the report template provided by EPRI. Eight (8) U.S. domestic plants have submitted MRP-227-A reactor internals exam summary results reports in the past two calendar years.

If additional information is required, please contact Kyle Amberge (650-855-2039; kamberge@epri.com) or Anne Demma (650-855-2026; ademma@epri.com)

Sincerely,

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cc: Joe Holonich, NRC
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Enclosure: MRP-227 Inspection Results

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ENCLOSURE TO MRP 2016-008

MRP-227 Related Inspections Performed from 2014-2015

Palisades - 2/2014, 26.1 EFPY

Turkey Point 3 - 4/2014, 30 EFPY

Oconee 3 - 4/2014, 31.7 EFPY

Turkey Point 4 - 10/2014, 31 EFPY

Prairie Island 1 - 10/2014, 34 EFPY

Point Beach 2 - 10/2015, 35 EFPY

Turkey Point 3 - 11/2015, 31.7 EFPY

Prairie Island 2 - 11/2015, 35.5 EFPY

Three Mile Island 1 - 11/2015, 30.4 EFPY

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Tables for Reporting MRP-227-A Inspection Results for CE Plants

Plant Name: Palisades Utility: Entergy
 Date of Exams: 1/31 thru 2/21/2014 Plant Age: 43 (years) / 26.1 EFPY

Primary Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Shroud Assembly (Bolted) Core shroud bolts	Volumetric examination (UT)	100% of accessible bolts (see Note 2). Heads are accessible from the core side. UT accessibility may be affected by complexity of head and locking device designs. See Figure 4-24 of MRP-227-A of MRP-227-A.	N/A	See Comments
Comments: In accordance with MRP-227A and the Palisades Aging Management Plan examinations will be performed by 2022. (approximately 34.3 EFPY)				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Shroud Assembly (Welded) Core shroud plate-former plate weld	Enhanced visual examination (EVT-1)	Axial and horizontal weld seams at the core shroud re-entrant corners as visible from the core side of the shroud, within six inches of central flange and horizontal stiffeners. See Figures 4-12 and 4-14 of MRP 227-A.	N/A	See Comments
Comments: Not applicable to Palisades.				
Core Shroud Assembly (Welded) Shroud plates	Enhanced visual examination (EVT-1)	Axial weld seams at the core shroud re-entrant corners, at the core mid-plane (\pm three feet in height) as visible from the core side of the shroud. See Figure 4-13 of MRP-227-A.	N/A	See Comments
Comments: Not applicable to Palisades.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Shroud Assembly (Bolted) Assembly	Visual examination (VT-3)	Core side surfaces as indicated. See Figures 4-25 and 4-26 of MRP-227-A.	100%	Slight gap in shroud plate at the shroud anchor bolt location for seam 4. All other seams acceptable. See Comments
Comments: Gap was verified from original fabrication, deviation report DCR 9700101-8 Dated 12/31/68. As-built gap measured at .046". Based on photograph this does not appear to have changed. Examinations included 768 shroud to former bolts and 96 shroud to anchor bolts. One core shroud bolt seated different than all others with the locking bar slightly bent and opening on the right side.				
Core Shroud Assembly (Welded) Assembly	Visual examination (VT-1)	If a gap exists, make three to five measurements of gap opening from the core side at the core shroud re-entrant corners. Then, evaluate the swelling on a plant-specific basis to determine frequency and method for additional examinations. See Figures 4-12 and 4-14 of MRP-227-A.	N/A	See Comments
Comments: Not Applicable to Palisades.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Support Barrel Assembly Upper (core support barrel) flange weld	Enhanced visual examination (EVT-1)	100% of the accessible surfaces of the upper flange weld (Note 3). See Figure 4-15 of MRP-227-A.	100% Scan was performed from the inside of the core barrel.	No indications.
Comments: N/A				
Core Support Barrel Assembly Lower cylinder girth welds	Enhanced visual examination (EVT-1)	100% of the accessible surfaces of the lower cylinder welds (Note 3). See Figure 4-15 of MRP-227-A	<p>The upper girth weld scan was performed from the inside of the barrel. Coverage achieved 100%.</p> <p>The middle girth weld scan was performed from the outside of the core barrel. Coverage achieved 86.67%.</p> <p>The lower girth weld scan was performed from outside the core barrel. Coverage achieved 76.67%.</p>	<p>No indications</p> <p>No indications</p> <p>No indications</p>
Comments: For Palisades the Lower Cylinder Girth Welds consist of three welds: the Upper Girth Weld; the Middle Girth Weld; and the Lower Girth Weld. In the Wesdyne report these welds are incorrectly named. The report calls the Middle Girth Weld the Lower Girth Weld and calls the Lower Girth Weld the Lower Flange Weld.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Lower Support Structure Core support column welds	Visual examination (VT-3)	100% of the accessible surfaces of the core support column welds (Note 4). See Figures 4-16 and 4-31 of MRP-227-A	96% See comments.	No indications.
Comments: Approximately 4% inaccessible due to baffle plate periphery and no access hole for OD.				
Core Support Barrel Assembly Lower flange weld	If fatigue life cannot be demonstrated by time-limited aging analysis (TLAA), enhanced visual (EVT-1) examination	Examination coverage to be defined by evaluation to determine the potential location and extent of fatigue cracking. See Figures 4-15 and 4-16 of MRP-227-A.	N/A	See Comments
Comments: Not Applicable to Palisades.				
Lower Support Structure Core support plate	If fatigue life cannot be demonstrated by time-limited aging analysis (TLAA), enhanced visual (EVT-1) examination	Examination coverage to be defined by evaluation to determine the potential location and extent of fatigue cracking. See Figure 4-16 of MRP-227-A.	93% See comments	No indications
Comments: Approximately 7% inaccessible due to baffle plate construction.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Upper Internals Assembly Fuel alignment plate	If fatigue life cannot be demonstrated by time-limited aging analysis (TLAA), enhanced visual (EVT-1) examination	Examination coverage to be defined by evaluation to determine the potential location and extent of fatigue cracking. See Figure 4-17 of MRP-227-A.	N/A	See Comments
Comments: Not Applicable to Palisades.				
Control Element Assembly Instrument guide tubes	Visual examination (VT-3)	100% of tubes in peripheral CEA shroud assemblies (i.e., those adjacent to the perimeter of the fuel alignment plate). See Figure 4-18 of MRP-227-A.	15 locations around the periphery of the upper guide structure. 8 welds per guide tube. Coverage achieved 100%	Two guide tubes at locations B7 and G5 have slots in the tubes. Also, at location B7 there is an extra welded attachment to the tube with a different style bracket.
Comments: N/A				
Lower Support Structure Deep beams	Enhanced visual examination (EVT-1)	Examine beam-to-beam welds, in the axial elevation from the beam top surface to four inches below. See Figure 4-19 of MRP-227-A.	N/A	See Comments

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Comments: Not applicable to Palisades.				

Note to CE Primary Components Table:

1. Examination acceptance criteria and expansion criteria for the CE components are in Table 5-2 of MRP-227-A.
2. A minimum of 75% of the total population (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-2 of MRP-227-A, must be examined for inspection credit.
3. A minimum of 75% of the total weld length (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-2 of MRP-227-A, must be examined from either the inner or outer diameter for inspection credit.
4. A minimum of 75% of the total population of core support column welds.

No EXPANSION components required inspections at Palisades during spring 2014.

Existing Programs Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Core Shroud Assembly Guide lugs Guide lug inserts and bolts	Visual examination (VT-3), general condition examination for detection of excessive or asymmetrical wear.	Accessible surfaces at specified frequency.	100% the guide lugs have slight wear. Some of the lock pins are protruding from the insets. One bolt is loose but secure when the core barrel is installed. See Comments.	N/A
Comments: This condition was identified in 1995 and again in 2007. The condition has not changed.				
Lower Support Structure Fuel alignment pins (plants with core shrouds assembled with full-height shroud plates)	Visual examination (VT-3) to detect severed fuel alignment pins, missing locking tabs, or excessive wear on the fuel alignment pin nose or flange.	Accessible surfaces at specified frequency.	N/A	See comments
Comments: The fuel alignment pins at Palisades are in the fuel bundles not in the lower core support plate.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Lower Support Structure Fuel alignment pins (plants with core shrouds assembled in two vertical sections)	Visual examination (VT-3)	Accessible surfaces at specified frequency.	N/A	N/A
Comments: Not applicable for Palisades.				
Core Barrel Assembly Upper flange	Visual examination (VT-3)	Area of the upper flange potentially susceptible to wear.	100% coverage.	No signs of abnormal wear.
Comments: N/A				

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Tables for Reporting MRP-227-A Inspection Results for Westinghouse Plants

Plant Name: Turkey Point Unit 3 **Utility:** NextEra Energy/FPL

Date of Exams: March-April 2014, PTN3-27RFO **Plant Age:** 42 (years) / 30 EFPY

Primary Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Guide plates (cards)	Visual examination (VT-3)	20% examination of the number of CRGT assemblies, with all guide cards within each selected CRGT assembly examined. See Figure 4-20 of MRP-227- A	Not inspected during PTN3-27RFO. Inspection planned for PTN3-28RFO, Fall 2015	N/A
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Lower flange welds	Enhanced visual examination (EVT-1) to determine the presence of crack-like surface flaws in flange welds	100% of outer (accessible) CRGT lower flange weld surfaces and adjacent base metal on the individual periphery CRGT assemblies. (Note 2) See Figure 4-21 of MRP-227-A.	Not inspected during PTN3-27RFO. Inspection planned for PTN3-28RFO, Fall 2015	N/A
Comments:				
Core Barrel Assembly Upper core barrel flange weld	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A.	100%	No Recordable Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Barrel Assembly Upper and lower core barrel cylinder girth welds	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A	Upper – 100% Lower – 90.6%	No Recordable Indications No Recordable Indications
Comments:				
Core Barrel Assembly Lower core barrel flange weld (Note 5)	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4).	90.5%	No Recordable Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly Baffle-edge bolts	Visual examination (VT-3)	Bolts and locking devices on high fluence seams. 100% of components accessible from core side (Note 3). See Figure 4-23 of MRP-227-A.	Not inspected during PTN3-27RFO. Inspection planned for PTN3-28RFO, Fall 2015	N/A
Comments:				
Baffle-Former Assembly Baffle-former bolts	Volumetric examination (UT)	100% of accessible bolts (Note 3). Heads accessible from the core side. UT accessibility may be affected by complexity of head and locking device designs. See Figures 4-23 and 4-24 of MRP-227-A.	Not inspected during PTN3-27RFO. Inspection planned for PTN3-28RFO, Fall 2015	N/A
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly (Includes: Baffle plates, baffle edge bolts and indirect effects of void swelling in former plates)	Visual examination (VT-3)	Core side surface as indicated. See Figures 4-24, 4-25, 4-26 and 4-27 of MRP-227-A.	100%	No Recordable Indications
Comments:				
Alignment and Interfacing Components Internals hold down spring	Direct measurement of spring height	Measurements should be taken at several points around the circumference of the spring, with a statistically adequate number of measurements at each point to minimize uncertainty. See Figure 4-28 of MRP-227-A.	100%	SAT
Comments: Measurements taken at eight circumferential positions. All exceeded the minimum height criteria for 60 years of operation.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Thermal Shield Assembly Thermal shield flexures	Visual examination (VT-3)	100% of thermal shield flexures. See Figures 4-29 and 4-36 of MRP-227-A.	100%	No Recordable Indications
Comments:				

Notes to Westinghouse Primary Components Table:

1. Examination acceptance criteria and expansion criteria for the Westinghouse components are in Table 5-3 of MRP-227-A.
2. A minimum of 75% of the total identified sample population must be examined.
3. A minimum of 75% of the total population (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined for inspection credit.
4. A minimum of 75% of the total weld length (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined from either the inner or outer diameter for inspection credit.
5. The lower core barrel flange weld may be alternatively designated as the core barrel-to-support plate weld in some Westinghouse plant designs.

No EXPANSION components were inspected at Turkey Point 3 during spring 2014.

Existing Programs Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Core Barrel Assembly Core barrel flange	Visual examination (VT-3) to determine general condition for excessive wear.	All accessible surfaces at specified frequency.	100%	A significant impression and a minor arc-shaped impression were identified on the underside surface of the CBF at the 25-degree location, and a significant impression was identified at the 240-degree location. The impressions appear to have been caused by foreign material (FM) trapped between the underside surface of the CBF and its mating surface, the top side of the CSL.
Comments: The two impression appear to have been caused by (FM) trapped between the two mating surfaces. The impressions are highly localized and not expected to affect the functionality and bearing area of these surfaces				
Upper Internals Assembly Upper support ring or skirt	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Recordable Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual (VT-3) examination of the lower core plates to detect evidence of distortion and/or loss of bolt integrity.	All accessible surfaces at specified frequency.	100%	No Recordable Indications
Comments:				
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Recordable Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Bottom Mounted Instrumentation System Flux thimble tubes	Surface examination (ET)	Eddy current surface examination as defined in plant response to IEB 88-09.	Replaced seven thimble tubes during PTN3-27RFO	Seven thimble tubes successfully replaced.
Comments:				
Alignment and Interfacing Components Clevis insert bolts	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	Abrasive wear noted on bolts and lock bars at 270° key and clevis. Degradation attributed to foreign material, possibly an RCP diffuser adapter cap screw, retrieved during previous RFO.
Comments: The degradation does not affect the structural integrity or functionality of the radial support structure.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Alignment and Interfacing Components Upper core plate alignment pins	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Recordable Indications
Comments:				

Notes to Westinghouse Existing Programs Components Table:

1. XL = "Extra Long" referring to Westinghouse plants with 14-foot cores.

Tables for Reporting MRP-227-A Inspection Results for B&W Plants

Plant Name: Oconee Unit 3 Utility: Duke Energy
 Date of Exams: 4/14/2014 to 5/14/2014 Plant Age: 40 (years) / 31.67 EFPY

Primary Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Plenum Cover Assembly & Core Support Shield Assembly	One-time physical measurement (initial Inspection)	Determination of differential height of top of plenum rib pads to reactor vessel seating surface, with plenum in reactor vessel.	Measurement performed in 2007	No relevant Indications were noted.
Plenum cover weldment rib pads	Visual (VT-3) for subsequent inspections	See Figure 4-1 of MRP-227-A.	VT-3 100%	No relevant Indications were noted.
Plenum cover support flange				
CSS top flange				
Comments: The one-time physical measurement was performed in Fall 2007 with no evidence of wear occurring during service period				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Control Rod Guide Tube Assembly CRGT spacer castings	Visual (VT-3)	Accessible surfaces at each of the 4 screw locations (at every 90°) of 100% of the CRGT spacer castings (limited accessibility). See Figure 4-5 of MRP-227-A.	100% 690 castings with 4 screws each.	No relevant Indications were noted.
Comments:				
Core Support Shield Assembly CSS vent valve top retaining ring CSS vent valve bottom retaining ring (Note 1)	Visual (VT-3)	100% of accessible surfaces (see BAW-2248A, page 4.3 and Table 4-1). See Figure 4-11 of MRP-227-A.	100% There are 8 vent valves.	No relevant Indications were noted on retaining rings. See Comment Section for relevant indications noted on other CSS vent valve parts.
<p>Comments: The jack screw locking devices are not currently in MRP-227 but were identified as needing to be screened in A/LAI #2. Additional parts of the Vent Valves, including the jack screw locking devices, receive a ASME Section XI, Category B-N-3 VT-3 examination. No vent valve replacements were necessary.</p> <p>Vent Valve XW - The right side jack screw locking cup crimps indicate that the jack screw has rotated slightly, pushing the locking crimps outward. The jack screw insert in the in the right side guide block was tilted and there was gouging at both corners of the guide block.</p> <p>Vent Valve ZW – Relevant indications on the inside crimps of both the right and left side locking cups.</p> <p>Vent Valve XY – Relevant Indications in the form of gouges were identified on the left and right jacking screw guide blocks.</p> <p>Vent Valve ZY – Relevant indications on the outside crimp of the right side locking cup.</p> <p>Vent Valve WZ – The spring loaded locking devices of both the left and right jacking screws were not shown as engaged.</p>				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Core Support Shield Assembly Upper core barrel (UCB) bolts and their locking devices	Volumetric examination (UT) of the bolts	100% of accessible bolts and their locking devices. (Note 3)	100% UT performed in 2007 (120 UCB bolts)	No recordable indications were detected in 118 of the 120 UCB bolts. Bolts #10 and #85 had no UT back wall response similar to previous inspections.(1984, 1985 and 1987).
	Visual (VT-3) examination of bolt locking devices	See Figure 4-7 of MRP-227-A.	VT-3 100% performed this outage (120 locking devices)	No relevant Indications were noted.
Comments:				
Core Barrel Assembly Lower core barrel (LCB) bolts and their locking devices	Volumetric examination (UT) of the bolts	100% of accessible bolts and their locking devices (Note 3)	100% - 108 bolts	UT – 3 lower core barrel bolt with crack like indications (#15, #91 and #100). These same bolts were identified with indications in 1987.
	Visual (VT-3) examination of bolt locking devices	See Figure 4-8 of MRP-227-A.	100% - 108 bolts and locking devices.	VT – No relevant indications
Comments: The indication is located in the bolt head-to-shank region.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Core Barrel Assembly Baffle-to-former bolts	Volumetric examination (UT)	100% of accessible bolts. (Note 3) See Figure 4-2 of MRP-227-A.	863 out of 864 1 baffle-to-former bolt was un-inspectable due to probe not seating correctly.	One crack like indication was detected on bolt # 2-1-2-6 1 un-inspectable, bolt #2-7-1-3
<p>Comments: Examination limitation was noted on Hex Head Baffle-to-Former Bolt (Quadrant – Plate – Column – Elevation) #2-7-1-3. Probe did not seat correctly.</p> <p>The indication on bolt #2-1-2-6 is located in the bolt head-to-shank region.</p>				
Core Barrel Assembly Baffle plates	Visual examination (VT-3)	100% of the accessible surface within 1 inch around each flow and bolt hole. See Figure 4-2 of MRP-227-A.	100%	No relevant Indications were noted.
<p>Comments:</p>				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Core Barrel Assembly Locking devices, including locking welds, of baffle-to-former bolts and internal baffle-to-baffle bolts	Visual examination (VT-3)	100% of accessible baffle-to-former and internal baffle-to-baffle bolt locking devices. (Note 3) See Figure 4-2 of MRP-227-A.	100% 864 baffle-to-former and 272 internal baffle-to-baffle bolts.	No relevant Indications were noted.
Comments:				
Flow Distributor Assembly Flow distributor (FD) bolts and their locking devices	Volumetric examination (UT) of the bolts	100% of accessible bolts and their locking devices. (Note 3)	UT -- 100% 96 bolts inspected.	UT -- 1 flow distributor bolts (#87) with crack like indications.
	Visual (VT-3) examination of bolt locking devices	See Figure 4-8 of MRP-227-A.	VT -- 100% 96 bolts and their locking devices inspected.	VT -- No relevant Indications were noted.
Comments: Recordable UT indication detected in FD Bolt #87 located in the bolt head-to-shank region. 84 Flow distributor bolts were inspected in 1987 and bolt #88 was identified with an indication. There was likely a mix-up in numbering in 1987.				
Lower Grid Assembly Alloy X-750 dowel-to-guide block welds	Visual examination (VT-3)	Accessible surfaces of 100% of the 24 dowel-to-guide block welds. See Figure 4-4 of MRP-227-A.	100% 24 dowel-to-guide blocks welds.	No relevant Indications.
Comments: Guide block W9R is bent outward away from the lower grid shell forging and rotated slightly. Welds to the dowel and bolting are intact. Marks on the guide block and core barrel stand leg indicate that the damage may have occurred during a previous outage when setting the core barrel in the stand.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Incore Monitoring Instrumentation (IMI) Guide Tube Assembly IMI guide tube spiders IMI guide tube spider-to-lower grid rib section welds	Visual examination (VT-3)	100% of top surfaces of 52 spider castings and welds to the adjacent lower grid rib section. See Figures 4-3 and 4-6 of MRP-227-A.	100% 52 spider castings, each casting with 8 welds.	IMI Guide Tube Spider Casting Weld B8-YL had a linear indication located just below the vertical weld toe in the base material of the lower grid. IMI Guide Tube Spider Casting Weld G11-WR had a linear indication coming from the top of the casting at the weld toe and going downward into the casting material.
Comments:				

Notes to B&W Primary Component Table

1. A verification of the operation of each vent valve shall also be performed through manual actuation of the valve. Verify that the valves are not stuck in the open position and that no abnormal degradation has occurred. Examine the valves for evidence of scratches, pitting, embedded particles, leakage of the seating surfaces, cracking of lock welds and locking cups, jack screws for proper position, and wear. The frequency is defined in each unit's technical specifications or in their pump and valve inservice test programs (see BAW-2248A, page 4-3 and Table 4-1, reference 18 of MRP-227-A).
2. Examination acceptance criteria and expansion criteria for the B&W components are in Table 5-1 of MRP-227-A.
3. A minimum of 75% of the total population (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-1, must be examined for inspection credit.

No EXPANSION components were inspected during spring 2014.

Tables for Reporting MRP-227-A Inspection Results for Westinghouse Plants

Plant Name: Turkey Point Unit 4 Utility: NextEra Energy/FPLDate of Exams: September-October 2014, PTN4-28RFO Plant Age: 41 (years) / 31 EFPY

Primary Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Guide plates (cards)	Visual examination (VT-3)	20% examination of the number of CRGT assemblies, with all guide cards within each selected CRGT assembly examined. See Figure 4-20 of MRP-227-A	Not inspected during PTN4-28RFO. Inspection planned for PTN4-29RFO, Spring 2016	N/A
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Lower flange welds	Enhanced visual examination (EVT-1) to determine the presence of crack-like surface flaws in flange welds	100% of outer (accessible) CRGT lower flange weld surfaces and adjacent base metal on the individual periphery CRGT assemblies. (Note 2) See Figure 4-21 of MRP-227-A.	Not inspected during PTN4-28RFO. Inspection planned for PTN4-29RFO, Spring 2016	N/A
Comments:				
Core Barrel Assembly Upper core barrel flange weld	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A.	100%	No Recordable Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Barrel Assembly Upper and lower core barrel cylinder girth welds	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A	Upper – 100% Lower – 89%	No Recordable Indications No Recordable Indications
Comments:				
Core Barrel Assembly Lower core barrel flange weld (Note 5)	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4).	85%	No Recordable Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly Baffle-edge bolts	Visual examination (VT-3)	Bolts and locking devices on high fluence seams. 100% of components accessible from core side (Note 3). See Figure 4-23 of MRP-227-A.	Not inspected during PTN4-28RFO. Inspection planned for PTN4-30RFO, Fall 2017	N/A
Comments:				
Baffle-Former Assembly Baffle-former bolts	Volumetric examination (UT)	100% of accessible bolts (Note 3). Heads accessible from the core side. UT accessibility may be affected by complexity of head and locking device designs. See Figures 4-23 and 4-24 of MRP-227-A.	Not inspected during PTN4-28RFO. Inspection planned for PTN4-30RFO, Fall 2017	N/A
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly (Includes: Baffle plates, baffle edge bolts and indirect effects of void swelling in former plates)	Visual examination (VT-3)	Core side surface as indicated. See Figures 4-24, 4-25, 4-26 and 4-27 of MRP-227-A.	100%	No Recordable Indications
Comments:				
Alignment and Interfacing Components Internals hold down spring	Direct measurement of spring height	Measurements should be taken at several points around the circumference of the spring, with a statistically adequate number of measurements at each point to minimize uncertainty. See Figure 4-28 of MRP-227-A.	100%	SAT
Comments: Measurements taken at eight circumferential positions. All exceeded the minimum height criteria for 60 years of operation.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Thermal Shield Assembly Thermal shield flexures	Visual examination (VT-3)	100% of thermal shield flexures. See Figures 4-29 and 4-36 of MRP-227-A.	100%	No Recordable Indications
Comments:				

Notes to Westinghouse Primary Components Table:

1. Examination acceptance criteria and expansion criteria for the Westinghouse components are in Table 5-3 of MRP-227-A.
2. A minimum of 75% of the total identified sample population must be examined.
3. A minimum of 75% of the total population (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined for inspection credit.
4. A minimum of 75% of the total weld length (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined from either the inner or outer diameter for inspection credit.
5. The lower core barrel flange weld may be alternatively designated as the core barrel-to-support plate weld in some Westinghouse plant designs.

No EXPANSION components were inspected during fall 2014.

Existing Programs Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Core Barrel Assembly Core barrel flange	Visual examination (VT-3) to determine general condition for excessive wear.	All accessible surfaces at specified frequency.	100%	No Recordable Indications
Comments:				
Upper Internals Assembly Upper support ring or skirt	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Recordable Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual (VT-3) examination of the lower core plates to detect evidence of distortion and/or loss of bolt integrity.	All accessible surfaces at specified frequency.	100%	No Recordable Indications
Comments:				
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Recordable Indications
Comments:				
Bottom Mounted Instrumentation System Flux thimble tubes	Surface examination (ET)	Eddy current surface examination as defined in plant response to IEB 88-09.	N/A	N/A

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Comments:				
Alignment and Interfacing Components Clevis insert bolts	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Recordable Indications
Comments:				
Alignment and Interfacing Components Upper core plate alignment pins	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Recordable Indications
Comments:				

Notes to Westinghouse Existing Programs Components Table:

1. XL = "Extra Long" referring to Westinghouse plants with 14-foot cores.

Tables for Reporting MRP-227-A Inspection Results for Westinghouse Plants

Plant Name: Prairie Island Unit 1 Utility: Xcel Energy

Date of Exams: October 2014 Plant Age: 41 (years) / 34 EFPY

Primary Components

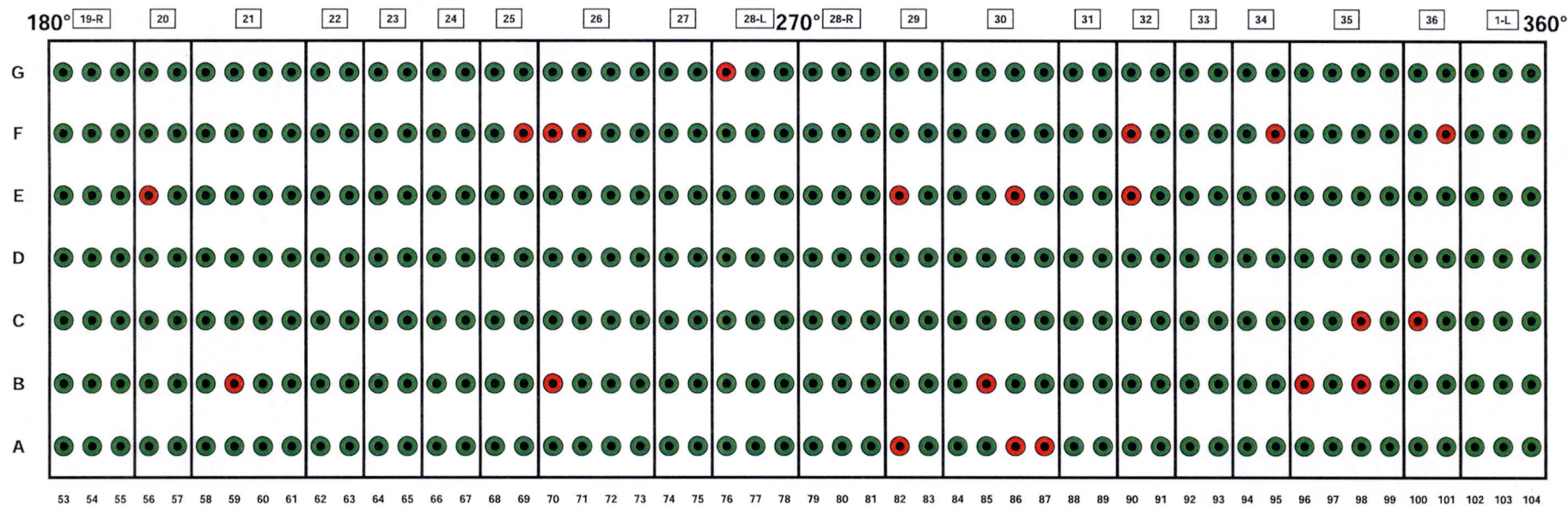
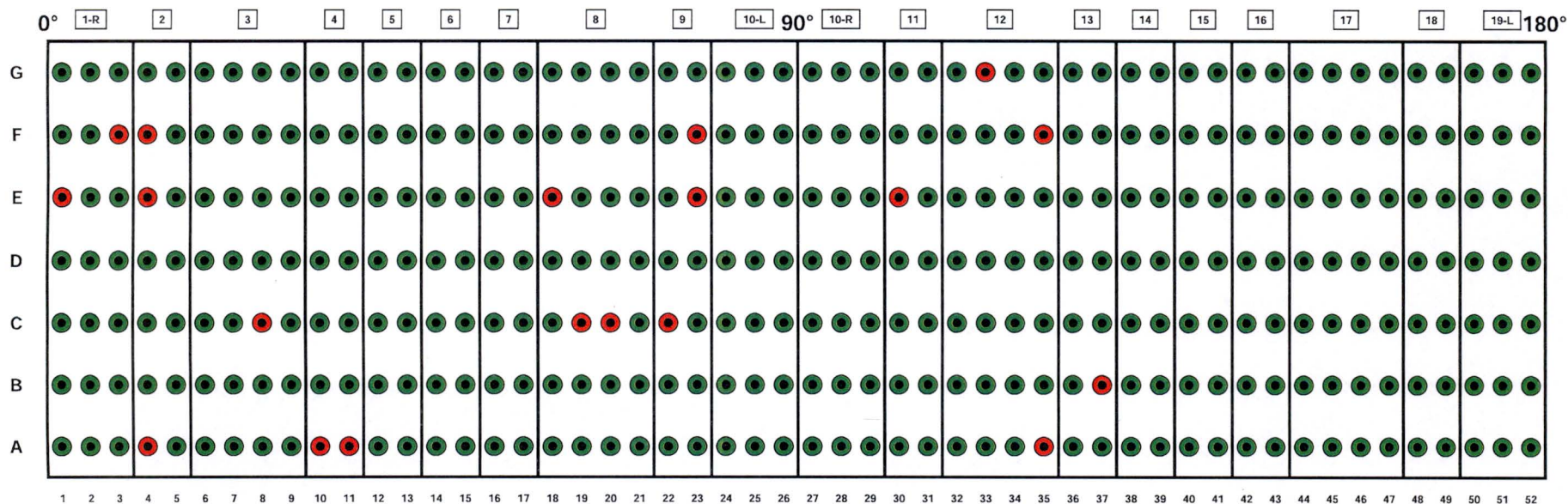
Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Guide plates (cards)	Visual examination (VT-3)	20% examination of the number of CRGT assemblies, with all guide cards within each selected CRGT assembly examined. See Figure 4-20 of MRP-227-A	Not Inspected this outage	
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Lower flange welds	Enhanced visual examination (EVT-1) to determine the presence of crack-like surface flaws in flange welds	100% of outer (accessible) CRGT lower flange weld surfaces and adjacent base metal on the individual periphery CRGT assemblies. (Note 2) See Figure 4-21 of MRP-227-A.	Not Inspected this outage	
Comments:				
Core Barrel Assembly Upper core barrel flange weld	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A.	100%	No Relevant Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Barrel Assembly Upper and lower core barrel cylinder girth welds	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A	100% UGW 76.5% LGW	No Relevant Indications
Comments:				
Core Barrel Assembly Lower core barrel flange weld (Note 5)	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4).	100%	No Relevant Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly Baffle-edge bolts	Visual examination (VT-3)	Bolts and locking devices on high fluence seams. 100% of components accessible from core side (Note 3). See Figure 4-23 of MRP-227-A.	100%	No Relevant Indications
Comments:				
Baffle-Former Assembly Baffle-former bolts	Volumetric examination (UT)	100% of accessible bolts (Note 3). Heads accessible from the core side. UT accessibility may be affected by complexity of head and locking device designs. See Figures 4-23 and 4-24 of MRP-227-A.	728 out of 728 bolts	40 bolts with indications. 688 bolts had no indications. No expansion was triggered. The extent of the bolt failures was bounded by minimum pattern analysis plus margin term per WCAP-17096
Comments: (See attached map.)				

status of 10-23-14 09:38 AM



- acquisition to do
- no acquisition
- acquisition ok
- retest
- without indication
- with indication
- not testable (UT)

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly Assembly (Includes: Baffle plates, baffle edge bolts and indirect effects of void swelling in former plates)	Visual examination (VT-3)	Core side surface as indicated. See Figures 4-24, 4-25, 4-26 and 4-27 of MRP-227-A.	100%	No Relevant Indications
Comments:				
Alignment and Interfacing Components Internals hold down spring	Direct measurement of spring height	Measurements should be taken at several points around the circumference of the spring, with a statistically adequate number of measurements at each point to minimize uncertainty. See Figure 4-28 of MRP-227-A.	Not Applicable (403SS)	
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Thermal Shield Assembly Thermal shield flexures	Visual examination (VT-3)	100% of thermal shield flexures. See Figures 4-29 and 4-36 of MRP-227-A.	100%	No Relevant Indications
Comments:				

Notes to Westinghouse Primary Components Table:

1. Examination acceptance criteria and expansion criteria for the Westinghouse components are in Table 5-3 of MRP-227-A.
2. A minimum of 75% of the total identified sample population must be examined.
3. A minimum of 75% of the total population (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined for inspection credit.
4. A minimum of 75% of the total weld length (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined from either the inner or outer diameter for inspection credit.
5. The lower core barrel flange weld may be alternatively designated as the core barrel-to-support plate weld in some Westinghouse plant designs.

No EXPANSION components were inspected during fall 2014.

Existing Programs Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Core Barrel Assembly Core barrel flange	Visual examination (VT-3) to determine general condition for excessive wear.	All accessible surfaces at specified frequency.	100%	No Relevant Indications
Comments:				
Upper Internals Assembly Upper support ring or skirt	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Relevant Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual (VT-3) examination of the lower core plates to detect evidence of distortion and/or loss of bolt integrity.	All accessible surfaces at specified frequency.	100% of Accessible Surface	No Relevant Indications
Comments:				
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100% of Accessible Surface	No Relevant Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Bottom Mounted Instrumentation System Flux thimble tubes	Surface examination (ET)	Eddy current surface examination as defined in plant response to IEB 88-09.	35 out of 36 flux thimble tubes (one has an internal restriction due to having been bent and is capped off)	6 tubes with wall loss 40-59% 18 tubes with wall loss 20-39% 1 tube with wall loss 1-19% 10 tubes with no wall loss
Comments: *** REPORT UPON THESE INSPECTIONS ONLY WHEN DONE IN CONJUNCTION WITH MRP-227-A RELATED EXAMS. ***				
Alignment and Interfacing Components Clevis insert bolts	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Relevant Indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Alignment and Interfacing Components Upper core plate alignment pins	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Relevant Indications
Comments:				

Notes to Westinghouse Existing Programs Components Table:

1. XL = "Extra Long" referring to Westinghouse plants with 14-foot cores.

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Tables for Reporting MRP-227-A Inspection Results for Westinghouse Plants

Plant Name: Point Beach Nuclear Plant Unit 2 Utility: NextEra EnergyDate of Exams: October, 2015 (U2R34) Plant Age: 43 (years) / ≈35 EFPY

Primary Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Guide plates (cards)	Visual examination (VT-3)	20% examination of the number of CRGT assemblies, with all guide cards within each selected CRGT assembly examined. See Figure 4-20 of MRP-227-A	100% of the CRGT assemblies <u>(COMPLETED DURING U2R33 – REPORTED APRIL 2014)</u>	See below
Comments: A VT-3 inspection and Guide Card Wear Measurements (GCWM) were completed on thirty-three (33) guide tubes, this being 100% of the rodded locations in the upper internals. In total, fifty-one (51) recordable indications were identified during the guide card inspection, and all indications were analyzed by Westinghouse Engineering.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Lower flange welds	Enhanced visual examination (EVT-1) to determine the presence of crack-like surface flaws in flange welds	100% of outer (accessible) CRGT lower flange weld surfaces and adjacent base metal on the individual periphery CRGT assemblies. (Note 2) See Figure 4-21 of MRP-227-A.	100% of outer CRGT lower flange welds and adjacent base metal (COMPLETED DURING U2R33 – REPORTED APRIL 2014)	No recordable indications
Comments: An EVT-1 inspection of the upper and lower GT flange welds was completed on twenty-four (24) guide tubes around the periphery of the upper internals. One-hundred eleven (111) welds were inspected to EVT-1 quality, and an additional fifty-two (52) welds were inspected, but EVT-1 quality was not demonstrated. No recordable indications were identified during the GT flange weld inspection.				
Core Barrel Assembly Upper core barrel flange weld	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A.	100% of Weld Length	No indications
Comments: Exterior surface				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Barrel Assembly Upper and lower core barrel cylinder girth welds	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A	100% of Upper Core Barrel Cylinder Girth Weld Length 55.6% of Lower Core Barrel Cylinder Girth Weld Length	No indications
Comments: Exterior surface Lower Core Barrel Cylinder Girth Weld is behind the Thermal Shield. The gap between inside surface of the thermal shield and outside surface of the core barrel limited access to the entire weld. 100% of the length of the Upper Core Barrel Cylinder Girth Weld + 55.6% of the length of the Lower Core Barrel Cylinder Girth Weld Were Examined / 2 Welds ≈ 78% of total weld length (Greater than 75% minimum of the total weld length)				
Core Barrel Assembly Lower core barrel flange weld (Note 5)	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4).	100% of Weld Length	No indications
Comments: Exterior surface				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly Baffle-edge bolts	Visual examination (VT-3)	Bolts and locking devices on high fluence seams. 100% of components accessible from core side (Note 3). See Figure 4-23 of MRP-227-A.	100% of Baffle Edge Bolts	No indications
Comments:				
Baffle-Former Assembly Baffle-former bolts	Volumetric examination (UT)	100% of accessible bolts (Note 3). Heads accessible from the core side. UT accessibility may be affected by complexity of head and locking device designs. See Figures 4-23 and 4-24 of MRP-227-A.	100% (727 – see below) <u>(COMPLETED DURING U2R33 – REPORTED APRIL 2014)</u>	15 (< 3%) original bolts exhibited reportable ultrasonic indications. All of the reported indications in the bolts were in the head to shank interface region (DHS). No reported indications in the replacement bolts
Comments:				
552 - original bolts. 175 - replacement bolts Total of 727 bolts. One bolt location does not contain a bolt				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly (Includes: Baffle plates, baffle edge bolts and indirect effects of void swelling in former plates)	Visual examination (VT-3)	Core side surface as indicated. See Figures 4-24, 4-25, 4-26 and 4-27 of MRP-227-A.	100%	No indications
Comments:				
Alignment and Interfacing Components Internals hold down spring	Direct measurement of spring height	Measurements should be taken at several points around the circumference of the spring, with a statistically adequate number of measurements at each point to minimize uncertainty. See Figure 4-28 of MRP-227-A.	N/A	
Comments:				
N/A – Point Beach Internals hold down spring is Type 403 SS				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Thermal Shield Assembly Thermal shield flexures	Visual examination (VT-3)	100% of thermal shield flexures. See Figures 4-29 and 4-36 of MRP-227-A.	100%	No indications
Comments:				
6 Thermal Shield Flexures				

Notes to Westinghouse Primary Components Table:

1. Examination acceptance criteria and expansion criteria for the Westinghouse components are in Table 5-3 of MRP-227-A.
2. A minimum of 75% of the total identified sample population must be examined.
3. A minimum of 75% of the total population (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined for inspection credit.
4. A minimum of 75% of the total weld length (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined from either the inner or outer diameter for inspection credit.
5. The lower core barrel flange weld may be alternatively designated as the core barrel-to-support plate weld in some Westinghouse plant designs.

No EXPANSION components were inspected during fall 2015.

Existing Programs Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Core Barrel Assembly Core barrel flange	Visual examination (VT-3) to determine general condition for excessive wear.	All accessible surfaces at specified frequency.	N/A	
Comments: ASME Section XI ISI Exam not performed during U2R33 or U2R34				
Upper Internals Assembly Upper support ring or skirt	Visual examination (VT-3)	All accessible surfaces at specified frequency.	N/A	
Comments: ASME Section XI ISI Exam not performed during U2R33 or U2R34				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual (VT-3) examination of the lower core plates to detect evidence of distortion and/or loss of bolt integrity.	All accessible surfaces at specified frequency.	N/A	
Comments: ASME Section XI ISI Exam not performed during U2R33 or U2R34				
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual examination (VT-3)	All accessible surfaces at specified frequency.	N/A	
Comments: ASME Section XI ISI Exam not performed during U2R33 or U2R34				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Bottom Mounted Instrumentation System Flux thimble tubes	Surface examination (ET)	Eddy current surface examination as defined in plant response to IEB 88-09.	N/A	
Comments: ASME Section XI ISI Exam not performed during U2R33 or U2R34				
Alignment and Interfacing Components Clevis insert bolts	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No recordable indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Alignment and Interfacing Components Upper core plate alignment pins	Visual examination (VT-3)	All accessible surfaces at specified frequency.	N/A	
Comments: ASME Section XI ISI Exam not performed during U2R33 or U2R34				

Notes to Westinghouse Existing Programs Components Table:

1. XL = "Extra Long" referring to Westinghouse plants with 14-foot cores.

Tables for Reporting MRP-227-A Inspection Results for Westinghouse Plants, Rev.2

Plant Name: Turkey Point Nuclear Plant Unit 3Utility: Florida Power and LightDate of Exams: PTN3-28RFO 10/19/15 to 12/2/15Plant Age: 43.5 (years) / 31.70 EFPY

Primary Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Guide plates (cards)	Visual examination (VT-3)	Examination per WCAP-17451-P of CRGT assemblies, with all guide cards within each selected CRGT assembly examined. See MRP-2014-006 and WCAP-17451-P	20% of the CRGT assemblies.	Results provided below.

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)																				
Comments:																								
VT-3 inspection and Guide Card Wear Measurements (GCWM) were completed on nine (9) guide tubes (i.e. 20% of the active locations in the upper internals).																								
Results using the 20% adjusted wear volume are as follows:																								
<table><tr><td>Location</td><td>Wear (%)</td></tr><tr><td>C-7</td><td>6</td></tr><tr><td>D-8</td><td>6</td></tr><tr><td>F-4</td><td>3</td></tr><tr><td>F-12</td><td>7</td></tr><tr><td>H-8</td><td>7</td></tr><tr><td>K-14</td><td>39</td></tr><tr><td>L-5</td><td>7</td></tr><tr><td>M-8</td><td>18</td></tr><tr><td>P-10</td><td>12</td></tr></table>					Location	Wear (%)	C-7	6	D-8	6	F-4	3	F-12	7	H-8	7	K-14	39	L-5	7	M-8	18	P-10	12
Location	Wear (%)																							
C-7	6																							
D-8	6																							
F-4	3																							
F-12	7																							
H-8	7																							
K-14	39																							
L-5	7																							
M-8	18																							
P-10	12																							
All indications were analyzed using WCAP-17451 and are within the allowable values.																								

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Lower flange welds	Enhanced visual examination (EVT-1) to determine the presence of crack-like surface flaws in flange welds	100% of outer (accessible) CRGT lower flange weld surfaces and adjacent base metal on the individual periphery CRGT assemblies. (Note 2) See Figure 4-21 of MRP-227-A.	100% of weld length.	No recordable indications.
Comments: Two hundred sixteen (216) welds were inspected to EVT-1 quality. No recordable indications were identified during the GT flange weld inspections.				
Core Barrel Assembly Upper core barrel flange weld	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A.	100% of weld length.	No recordable indications (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Barrel Assembly Upper and lower core barrel cylinder girth welds	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A	100% of Upper Core Barrel Cylinder Girth Weld Length. 90.6% of Lower Core Barrel Cylinder Girth Weld Length.	No recordable indications (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				
Core Barrel Assembly Lower core barrel flange weld (Note 5)	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4).	90.5% of Weld Length.	No recordable indications. (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly Baffle-edge bolts	Visual examination (VT-3)	Bolts and locking devices on high fluence seams. 100% of components accessible from core side (Note 3). See Figure 4-23 of MRP-227-A.	100% of Baffle Edge Bolts.	No recordable indications in 936 baffle edge bolts.
Comments: No recordable indications in 936 examined edge bolts.				
Baffle-Former Assembly Baffle-former bolts	Volumetric examination (UT)	100% of accessible bolts (Note 3). Heads accessible from the core side. UT accessibility may be affected by complexity of head and locking device designs. See Figures 4-23 and 4-24 of MRP-227-A.	Only 305 of 1088 baffle former bolts were examined.	No recordable indications in 305 baffle former bolts.
Comments: Only 305 of 1088 bolts were examined due to equipment issues. Remaining bolts are planned for a future outage.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly Assembly (Includes: Baffle plates, baffle edge bolts and indirect effects of void swelling in former plates)	Visual examination (VT-3)	Core side surface as indicated. See Figures 4-24, 4-25, 4-26 and 4-27 of MRP-227-A.	100%	No recordable indications (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				
Alignment and Interfacing Components Internals hold down spring	Direct measurement of spring height	Measurements should be taken at several points around the circumference of the spring, with a statistically adequate number of measurements at each point to minimize uncertainty. See Figure 4-28 of MRP-227-A.	100%	SAT (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Thermal Shield Assembly Thermal shield flexures	Visual examination (VT-3)	100% of thermal shield flexures. See Figures 4-29 and 4-36 of MRP-227-A.	100%	No recordable indications (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				

Notes to Westinghouse Primary Components Table:

1. Examination acceptance criteria and expansion criteria for the Westinghouse components are in Table 5-3 of MRP-227-A.
2. A minimum of 75% of the total identified sample population must be examined.
3. A minimum of 75% of the total population (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined for inspection credit.
4. A minimum of 75% of the total weld length (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined from either the inner or outer diameter for inspection credit.
5. The lower core barrel flange weld may be alternatively designated as the core barrel-to-support plate weld in some Westinghouse plant designs.

No EXPANSION components were inspected during fall 2015.

Existing Programs Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Core Barrel Assembly Core barrel flange	Visual examination (VT-3) to determine general condition for excessive wear.	All accessible surfaces at specified frequency.	100%	A significant impression and a minor arc-shaped impression were identified on the underside surface of the CBF at the 25-degree location, and a significant impression was identified at the 240-degree location. The impressions appear to have been caused by foreign material (FM) trapped between the underside surface of the CBF and its mating surface, the top side of the CSL. (Completed during PTN3-27RFO-Reported Spring 2014).
Comments: The two impressions appear to have been caused by (FM) trapped between the two mating surfaces. The impressions are highly localized and not expected to affect the functionality and bearing area of these surfaces.				
Upper Internals Assembly Upper support ring or skirt	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No recordable indications (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual (VT-3) examination of the lower core plates to detect evidence of distortion and/or loss of bolt integrity.	All accessible surfaces at specified frequency.	100%	No recordable indications (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No recordable indications (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Bottom Mounted Instrumentation System Flux thimble tubes	Surface examination (ET)	Eddy current surface examination as defined in plant response to IEB 88-09.	Replaced seven thimble tubes during PTN3-27RFO.	Seven thimble tubes successfully replaced.
Comments:				
Alignment and Interfacing Components Clevis insert bolts	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	Abrasive wear noted on bolts and lock bars at 270° key and clevis. Degradation attributed to foreign material, possibly an RCP diffuser adapter cap screw, retrieved during previous RFO. (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Alignment and Interfacing Components Upper core plate alignment pins	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No Recordable Indications (Completed during PTN3-27RFO-Reported Spring 2014).
Comments:				

Notes to Westinghouse Existing Programs Components Table:

1. XL = "Extra Long" referring to Westinghouse plants with 14-foot cores.

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Tables for Reporting MRP-227-A Inspection Results for Westinghouse Plants, Rev.2

Plant Name: Prairie Island Unit 2 Utility: Xcel Energy

Date of Exams: November 2015 Plant Age: 42 (years) / 35.5 EFPY

Primary Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Guide plates (cards)	Visual examination (VT-3)	Examination per WCAP-17451-P of CRGT assemblies, with all guide cards within each selected CRGT assembly examined. See MRP-2014-006 and WCAP-17451-P	Not Inspected this outage	<i>Maximum % volume wear: Five (5) worst case CRGTs:</i> (ref. Figures 3-5 through 3-7 of WCAP-17451-P for conversion of wear measurements to wear volume. Also specify high or low flow operation as defined in Tbl 4-2 of the WCAP)
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Control Rod Guide Tube Assembly Lower flange welds	Enhanced visual examination (EVT-1) to determine the presence of crack-like surface flaws in flange welds	100% of outer (accessible) CRGT lower flange weld surfaces and adjacent base metal on the individual periphery CRGT assemblies. (Note 2) See Figure 4-21 of MRP-227-A.	100% of peripheral welds that were accessible were examined. 42 weld segments were inspected EVT-1. 27 weld segments were inspected as best effort. 51 weld segments on the outer peripheral guide tubes were inaccessible for inspection (back side, obstructed, etc.)	No relevant indications
Comments: Note that the PINGP 14x14 CRGTs have 6 lower flange welds each, due to the fully enclosed guide tube (same as 17x17).				
Core Barrel Assembly Upper core barrel flange weld	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A.	100%	No relevant indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Barrel Assembly Upper and lower core barrel cylinder girth welds	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4). See Figure 4-22 of MRP-227-A	100% of Upper Girth Weld 76.5% of Lower Girth Weld	No relevant indications
Comments:				
Core Barrel Assembly Lower core barrel flange weld (Note 5)	Enhanced visual examination (EVT-1)	100% of one side of the accessible surfaces of the selected weld and adjacent base metal (Note 4).	100%	No relevant indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly Baffle-edge bolts	Visual examination (VT-3)	Bolts and locking devices on high fluence seams. 100% of components accessible from core side (Note 3). See Figure 4-23 of MRP-227-A.	100%	No relevant indications
Comments:				
Baffle-Former Assembly Baffle-former bolts	Volumetric examination (UT)	100% of accessible bolts (Note 3). Heads accessible from the core side. UT accessibility may be affected by complexity of head and locking device designs. See Figures 4-23 and 4-24 of MRP-227-A.	Not examined this outage.	
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Baffle-Former Assembly Assembly (Includes: Baffle plates, baffle edge bolts and indirect effects of void swelling in former plates)	Visual examination (VT-3)	Core side surface as indicated. See Figures 4-24, 4-25, 4-26 and 4-27 of MRP-227-A.	100%	No relevant indications
Comments:				
Alignment and Interfacing Components Internals hold down spring	Direct measurement of spring height	Measurements should be taken at several points around the circumference of the spring, with a statistically adequate number of measurements at each point to minimize uncertainty. See Figure 4-28 of MRP-227-A.	Not Required for springs of type-403 material.	
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Thermal Shield Assembly Thermal shield flexures	Visual examination (VT-3)	100% of thermal shield flexures. See Figures 4-29 and 4-36 of MRP-227-A.	100%	No relevant indications
Comments:				

Notes to Westinghouse Primary Components Table:

1. Examination acceptance criteria and expansion criteria for the Westinghouse components are in Table 5-3 of MRP-227-A.
2. A minimum of 75% of the total identified sample population must be examined.
3. A minimum of 75% of the total population (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined for inspection credit.
4. A minimum of 75% of the total weld length (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-3 of MRP-227-A, must be examined from either the inner or outer diameter for inspection credit.
5. The lower core barrel flange weld may be alternatively designated as the core barrel-to-support plate weld in some Westinghouse plant designs.

No EXPANSION components were inspected in Nov.2015.

Existing Programs Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Core Barrel Assembly Core barrel flange	Visual examination (VT-3) to determine general condition for excessive wear.	All accessible surfaces at specified frequency.	100%	No relevant indications
Comments:				
Upper Internals Assembly Upper support ring or skirt	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No relevant indications
Comments:				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual (VT-3) examination of the lower core plates to detect evidence of distortion and/or loss of bolt integrity.	All accessible surfaces at specified frequency.	100%	No relevant indications
Comments:				
Lower Internals Assembly Lower core plate XL lower core plate (Note 1)	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No relevant indications
Comments:				
Bottom Mounted Instrumentation System Flux thimble tubes	Surface examination (ET)	Eddy current surface examination as defined in plant response to IEB 88-09.	Not examined this outage.	

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings
Comments: *** REPORT UPON THESE INSPECTIONS ONLY WHEN DONE IN CONJUNCTION WITH MRP-227-A RELATED EXAMS. ***				
Alignment and Interfacing Components Clevis insert bolts	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No relevant indications
Comments:				
Alignment and Interfacing Components Upper core plate alignment pins	Visual examination (VT-3)	All accessible surfaces at specified frequency.	100%	No relevant indications
Comments:				

Notes to Westinghouse Existing Programs Components Table:

1. XL = "Extra Long" referring to Westinghouse plants with 14-foot cores.

Tables for Reporting MRP-227-A Inspection Results for B&W Plants

Plant Name: Three Mile Island Nuclear Station Unit 1 Utility: Exelon GenerationDate of Exams: 10/28/2015 to 11/23/2015 Plant Age: 41 (years) / 30.4 EFPY

Primary Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Plenum Cover Assembly & Core Support Shield Assembly Plenum cover weldment rib pads Plenum cover support flange CSS top flange	One-time physical measurement (initial inspection) Visual (VT-3) for subsequent inspections	Determination of differential height of top of plenum rib pads to reactor vessel seating surface, with plenum in reactor vessel. See Figure 4-1 of MRP-227-A.	100% of the weldment rib pads, plenum support flange, and CSS top flange.	No findings.
Comments: No findings were reported.				
Control Rod Guide Tube Assembly CRGT spacer castings	Visual (VT-3)	Accessible surfaces at each of the 4 screw locations (at every 90°) of 100% of the CRGT spacer castings (limited accessibility). See Figure 4-5 of MRP-227-A.	N/A	N/A
Comments: Not Examined during Fall 2015. Planned for Fall 2017.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Core Support Shield Assembly CSS vent valve top retaining ring CSS vent valve bottom retaining ring (Note 1)	Visual (VT-3)	100% of accessible surfaces (see BAW-2248A, page 4.3 and Table 4-1). See Figure 4-11 of MRP-227-A.	N/A Locking devices were examined for all Vent Valves.	N/A Impact damage noted on all valves, with one failed locking device requiring valve replacement.
<p>Comments:</p> <p>Not Examined during Fall 2015. Planned for Fall 2017.</p> <p>Vent valve locking devices were examined for all vent valves TS requirements and TMI specific commitment to MRP-227-A and PWROG interim guidance. One vent valve (adjacent to the hot leg) was found with a failed locking device in which the spring retainer had worn through the locking cup. The locking cup and spring retainer were functional as-found, but an assessment of operability over the next cycle could not be made. The damage mechanism was flow induced wear and was believed to originate in 1R18 after impact from the Plenum. This vent valve was of the original design.</p> <p>Remaining vent valves exhibited impact damage on the locking devices from the installation of the Plenum. This impact damage did not impact the ability of the locking devices to perform their design functions.</p>				
Core Support Shield Assembly Upper core barrel (UCB) bolts and their locking devices	Volumetric examination (UT) of the bolts Visual (VT-3) examination of bolt locking devices	100% of accessible bolts and their locking devices. (Note 3) See Figure 4-7 of MRP-227-A.	100% of all bolts and their locking devices. 120 bolts examined.	One indeterminate volumetric exam of bolt 24. Assumed failed.
<p>Comments:</p> <p>One bolt (# 24) was indeterminate based on volumetric exam results. The indeterminate response was the result of a low amplitude backwall response less than the 60% minimum required by procedure. The backwall response was 53%. No flaws were visible in the reviewed data; however the bolt was conservatively assumed failed. Expansion criteria were not triggered.</p>				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Core Barrel Assembly Lower core barrel (LCB) bolts and their locking devices	Volumetric examination (UT) of the bolts Visual (VT-3) examination of bolt locking devices	100% of accessible bolts and their locking devices (Note 3) See Figure 4-8 of MRP-227-A.	100% of all bolts and their locking devices. 108 bolts examined.	No findings.
Comments: No findings.				
Core Barrel Assembly Baffle-to-former bolts	Volumetric examination (UT)	100% of accessible bolts. (Note 3) See Figure 4-2 of MRP-227-A.	N/A	N/A
Comments: Not Examined during Fall 2015. Examination is planned for Fall 2017.				
Core Barrel Assembly Baffle plates	Visual examination (VT-3)	100% of the accessible surface within 1 inch around each flow and bolt hole. See Figure 4-2 of MRP-227-A.	N/A	N/A
Comments: Not examined during Fall 2015. Examination is planned for Fall 2017.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Core Barrel Assembly Locking devices, including locking welds, of baffle-to-former bolts and internal baffle-to-baffle bolts	Visual examination (VT-3)	100% of accessible baffle-to-former and internal baffle-to-baffle bolt locking devices. (Note 3) See Figure 4-2 of MRP-227-A.	N/A	N/A
Comments: Not Examined during Fall 2015. Examination is planned for Fall 2017.				
Flow Distributor Assembly Flow distributor (FD) bolts and their locking devices	Volumetric examination (UT) of the bolts Visual (VT-3) examination of bolt locking devices	100% of accessible bolts and their locking devices. (Note 3) See Figure 4-8 of MRP-227-A.	100% of all bolts and their locking devices. 108 bolts examined	One volumetric indication on bolt 44.
Comments: One volumetric indication noted in bolt 44. The indication was reported as a crack in the upper threads approximately 4.40" from the top of the bolt head. Expansion criteria were not triggered.				
Lower Grid Assembly Alloy X-750 dowel-to-guide block welds	Visual examination (VT-3)	Accessible surfaces of 100% of the 24 dowel-to-guide block welds. See Figure 4-4 of MRP-227-A.	100% of dowel-to-guide block welds. 12 guide block pairs examined.	No relevant indications noted.
Comments: Found a loose parts issue associated with a metal sliver on the underside of the guide block. The loose part was removed.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 2)
Incore Monitoring Instrumentation (IMI) Guide Tube Assembly IMI guide tube spiders IMI guide tube spider-to-lower grid rib section welds	Visual examination (VT-3)	100% of top surfaces of 52 spider castings and welds to the adjacent lower grid rib section. See Figures 4-3 and 4-6 of MRP-227-A.	N/A	N/A
Comments: Not Examined during Fall 2015. Examination is planned for Fall 2017.				

Notes to B&W Primary Component Table

1. A verification of the operation of each vent valve shall also be performed through manual actuation of the valve. Verify that the valves are not stuck in the open position and that no abnormal degradation has occurred. Examine the valves for evidence of scratches, pitting, embedded particles, leakage of the seating surfaces, cracking of lock welds and locking cups, jack screws for proper position, and wear. The frequency is defined in each unit's technical specifications or in their pump and valve inservice test programs (see BAW-2248A, page 4-3 and Table 4-1, reference 18 of MRP-227-A).
2. Examination acceptance criteria and expansion criteria for the B&W components are in Table 5-1 of MRP-227-A.
3. A minimum of 75% of the total population (examined + unexamined), including coverage consistent with the Expansion criteria in Table 5-1, must be examined for inspection credit.

Expansion Components

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Upper Grid Assembly Alloy X-750 dowel-to-upper grid fuel assembly support pad welds	Visual examination (VT-3)	Accessible surfaces of 100% of the dowel locking welds. See Figure 4-6 of MRP-227-A (i.e., these are similar to the lower grid fuel assembly support pads).	N/A	N/A
Comments: Expansion to this item was not required during Fall 2015.				
Core Barrel Assembly Upper thermal shield (UTS) bolts and their locking devices	Bolts: Volumetric examination (UT). Locking Devices: Visual examination (VT-3)	100% of accessible bolts or studs/nuts and their locking devices (Note 2). See Figure 4-7 of MRP-227-A.	N/A	N/A
Comments: Expansion to this item was not required during Fall 2015.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Core Barrel Assembly Surveillance specimen holder tube (SSHT) studs/nuts (CR-3) or bolts (DB) and their locking devices	Bolt or Stud/Nut: Volumetric examination (UT). Locking Devices: Visual examination (VT-3)	100% of accessible bolts or studs/nuts and their locking devices (Note 2). See Figure 4-7 or MRP-227-A.	N/A	N/A
Comments: This item does not apply to TMI.				
Lower Grid Assembly Lower grid fuel assembly support pad items; pad, pad-to-rib section welds, Alloy X-750 dowel, cap screw, and their locking welds	Visual examination (VT-3)	Accessible surfaces of the pads, dowels, and cap screws, and associated welds in 100% of the lower grid fuel assembly support pads. See Figure 4-6 or MRP-227-A.	N/A	N/A
Comments: Expansion to this item was not required during Fall 2015.				
Lower Grid Assembly Alloy X-750 dowel-to-lower grid fuel assembly support pad welds	Visual examination (VT-3)	Accessible surfaces of 100% of the support pad dowel locking welds. See Figure 4-6 or MRP-227-A.	N/A	N/A
Comments: Expansion to this item was not required during Fall 2015.				

Item	Examination Method	Required Examination Coverage	Coverage Achieved	Examination Findings (Note 1)
Lower Grid Assembly Lower grid shock pad bolts and their locking devices	Bolts: Volumetric examination (UT). Locking Devices: Visual examination (VT-3)	100% of accessible bolts and their locking devices. (Note 2) See Figure 4-4 of MRP-227-A.	100% of all bolts and their locking devices. 24 bolts examined	No findings.
Comments: The lower grid shock pad bolts and their locking devices were examined during the Fall 2015 refueling outage due to the proposed MRP-227 Revision 1. The Lower Grid Shock Pad Bolts are Primary items under the new revision. No findings were reported.				
Lower Grid Assembly Lower thermal shield (LTS) bolts (ANO-1, DB and TMI-1) or studs/nuts (ONS, CR-3) and their locking devices	Bolts: Volumetric examination (UT). Locking Devices: Visual examination (VT-3)	100% of accessible bolts and their locking devices. (Note 2) See Figure 4-8 of MRP-227-A.	N/A	N/A
Comments: Expansion to this item was not required during Fall 2015.				

Notes to B&W Expansion Components Table:

1. Examination acceptance criteria and expansion criteria for the B&W components are in Table 5-1 of MRP-227-A.
2. A minimum of 75% of the total population (examined + unexamined) must be examined for inspection credit.

Expansion Components Requiring Evaluation or Replacement In Lieu of Inspection

Item	Examination Method	Disposition
Core Barrel Assembly Core barrel cylinder (including vertical and circumferential seam welds) Former plates	No examination requirements. Justify by evaluation or by replacement.	N/A
Comments: Expansion to this item was not required during Fall 2015.		
Core Barrel Assembly Baffle-to-baffle bolts Core barrel-to-former bolts	Internal baffle-to-baffle bolts: No examination requirements, Justify by evaluation or by replacement.	N/A
	External baffle-to-baffle bolts, core barrel-to-former bolts: No examination requirements. Justify by evaluation or by replacement.	N/A
Comments: Expansion to this item was not required during Fall 2015.		
Core Barrel Assembly Locking devices, including locking welds, for the external baffle-to-baffle bolts and core barrel-to-former bolts	No examination requirements. Justify by evaluation or by replacement.	N/A
Comments: Expansion to this item was not required during Fall 2015.		