ELECTRIC POWER
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2019-078 BWR Vessel & Internals Project (BWRVIP)

(via e-mail)

August 16, 2019

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: Joseph Holonich

Subject: Docket No. 99902016– BWR Vessel and Internals Inspection Summaries for 2018 Outages

Enclosed are two (2) copies of the document entitled "BWR Vessel and Internals Project, Vessel Internals Inspection Summaries for 2018 Outages, August 2019."

The information provided in the enclosed document identifies the BWR internal components inspected and generally includes the date or frequency of inspection, the inspection method used and a summary of results including repair or replacement activities. The enclosed document is being provided to the NRC for information only.

The information contained in the enclosed document was developed by the individual utilities and has been compiled into the enclosed document by the BWRVIP. The BWRVIP plans to continue to gather such information and to provide periodic updates such as in the enclosed document.

Representatives of the BWRVIP would be pleased to meet with the NRC staff to discuss any comments or questions related to the enclosed document. If you have any questions on the enclosed document or the general subject of inspection results, please contact Wynter McGruder at EPRI by telephone at 704.595.2205 or by e-mail at wmcgruder@epri.com.

Sincerely,

G004
NRR

Tim Hanley, Exelon, BWRVIP Chairman
Kurt Edsinger, EPRI, Director of Materials

c: BWRVIP Research Integration Committee
BWRVIP Technical Chairmen
BWRVIP EPRI Task Managers

BWR Vessel and Internals Project

Vessel Internals Inspection Summaries for 2018 Outages

August 2019

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Spring 2018 Inspection Summaries

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Result, Repairs, Replacements, Reinspections
Core Shroud	1994	UT	Baseline (1994) per GE SIL No. 572 for circumferential seam welds - indications found in several welds (H-1, H-4, H-5).
	1997		Reinspection (1997) per GE SIL No. 572 - indications found in H-7 weld along with previous indications. Full structural margins on flawed welds for at least one additional operating cycle. Vertical welds not inspected.
	1998		Reinspection (1998): UT examination of H-1, H-2, H-3, H-4, H-5 performed. A total of 63 indications were recorded. A structural evaluation of H-3 was performed to support continued operation.
	2004		Reinspection (2004) per BWRVIP-76: UT examination of H-5 performed (51.1 % coverage, 37 indications). Current plant-specific calculation allows continued operation through end of Unit 3 Cycle 12 Fuel Cycle (2006); new plant-specific calculation to be performed to support continued operation beyond that time. UT examination of H-6 (3.4 % coverage, no indications) and H-7 performed (2.2 % coverage, 1 indication); reinspection required in 2006 due to lack of coverage.
			Baseline (2004) UT inspection per BWRVIP-76 for Vertical Welds V-5 (61.6% coverage, no indications) and V-6 (61.6% coverage, no indications).

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Shroud (continued)	2006	UT	Reinspection per BWRVIP-76: H-6 and H-7 were at the end of their inspection interval. UT examination of H-6 (24.41% coverage (one-sided), 0.0% flawed per examined weld length) and H-7 (19.44% coverage (one-sided), 3.27% flawed per examined weld length) was less than the BWRVIP-76 mandated 50% minimum due to mechanical and physical accessibility problems (e.g., RPV surveillance capsules, sensing lines, etc.) with the UT inspection equipment. Plant-specific evaluations demonstrated adequate structural margin exists for continued operation for one fuel cycle. Both Welds H-6 and H-7 will require reinspection using a two-sided UT technique during the U3C13 Refueling Outage in 2008. Attempts were made to examine Horizontal Welds H1 through H5 and Vertical Welds V6 and V7 one cycle before their inspection interval will expire. UT examinations (one-sided) of H-1 (75.62 % coverage, 5.65% flawed per examined weld length), H-2 (86.1% coverage, 1.28% flawed per examined weld length), and H-4 (15.92% examined, 3.24% flawed per examined weld length) were performed. Inspections of H-3, H-5, V-6, and V-7 were not performed. Plans are to reinspect Welds H1 through H5 using a two-sided UT technique during the U3C13 Refueling Outage in 2008. Welds V6 and V7 will be inspected using a one-sided UT technique during the U3C13 Refueling Outage in 2008.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Shroud (continued)	2008	UT	Reinspection: UT examination of H1 (single-sided) and H2, H3, H4, H5, H6, H7, V5, and V6 (two-sided) performed per BWRVIP-76. The length of the weld inspected was at least 50 percent of the weld circumference in all cases. Flaws observed in five (H1, H2, H3, H4, & H7) horizontal welds and one vertical weld (V5) were less than 20 percent of examined length. Flaws observed in the H5 horizontal weld were less than 30 percent of examined length. DLL calculations showed that all welds had a 10-year reinspection interval. All horizontal (and associated vertical) welds will not be reinspected until 2018.
	2018	UT	Reinspection per BWRVIP-76-R1-A: UT (two-sided) examination of H1-H7 (H1 Upper was baseline inspection), V5, and V6. Results as follows: Weld #/Scan Side/% Coverage/ % Examined Weld Length Flawed H1 / Upper / 85.6% / 0.5% H1 / Lower / 88.0% / 8.0% H2 / Upper / 88.8% / 1.8% H2 / Lower / 84.6% / 0.0% H3 / Upper / 84.6% / 0.0% H3 / Lower / 84.1% / 1.0% H4 / Upper / 99.1% / 0.0% H4 / Lower / 98.6% / 5.3% H5 / Upper / 90.0% / 30.1% H5 / Lower / 90.5% / 0.0% H6 / Upper / 90.6% / 0.0% H6 / Lower / 95.1% / 0.0% H7 / Upper / 90.8% / 3.2% H7 / Lower / 60.9% / 0.0% V5 / CCW Side / 96.6% / 1.7% V5 / CW Side / 91.5% / 0.0% V6 / CCW Side / 95.3% / 0.0% V6 / CW Side / 95.2% / 0.0%

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Shroud (continued)	2018	EVT-1	Off-Axis Cracking Examination per BWRVIP Letter 2016-030: EVT-1 visual examination of Welds H4 (40°-50°, 130°-140°, 160°-180°, 180°-200°, 220°-230°, & 310°-320°), V4 (40" of both HAZ's starting from H4), and V6 (40" of both HAZ's starting from H5). No relevant indications were observed.
Shroud Support	1994	EVT-1, UT, VT-1	Manway cover (access hole cover) UT inspected during U3C6 Refueling Outage (1994) per the requirements of GE SIL No. 462. No reportable indications were found.
	1998		Reinspection (1998): Both access hole cover exams (UT) performed with no reportable indications.
	2000		Baseline (2000) EVT-1 inspection per BWRVIP-38 for Shroud Support Welds H-8 and H-9 at 0° and 180° locations. No reportable indications.
	2004		Reinspection (2004) of access hole cover locations at 0° and 180° per GE SIL No. 462 R1 (EVT-1). No reportable indications were found.
			Reinspection (2004) of Shroud Support welds H-8 (EVT-1) and H-9 (manual UT) per BWRVIP-38, -104. No reportable indications were found.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Shroud Support (continued)	2008	EVT-1	Reinspection of Shroud Support weld H-8 (EVT-1) at 0° and 180° per BWRVIP-38. No reportable indications were found.
			Reinspection of access hole cover locations at 0° and 180° per GE SIL No. 462 R1 (EVT-1). No reportable indications were found.
	2012	UT	Baseline UT inspection using phased array per BWRVIP-180 of access hole cover locations at 0 and 180 degrees. No relevant indications.
	2014	EVT-1	Reinspection of Shroud Support welds H-8 and H-9 (EVT-1) at 0° and 180° per BWRVIP-38. No relevant indications found.
	2018	UT	Reinspection per BWRVIP-180 of access hole cover locations at 0 and 180 degrees. No relevant indications observed.
Core Spray Piping	1994	EVT-1, UT, VT-1	IEB 80-13/GE SIL No. 289 R1S2 of piping and welds in annulus. Indications found during U3C6 Refueling Outage (1994) in T-box to pipe weld - both T-boxes repaired with brackets.
	1997		(1997): Indications found during U3C7 Refueling Outage on welds P4d (two minor indications, total flaw length of 1.4 inches) and P8b (79% of total weld length) in Downcomer "C" piping. No other indications found.
	1998		Reinspection (1998): UT and VT exams performed per VIP guidelines, no reportable indications. Lower section of "C" Downcomer replaced with bolted piping assembly.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Spray Piping (continued)	2000	EVT-1, VT-1	Reinspection per BWRVIP-18: EVT-1 visual inspections (piping bracket welds; P4d, P8a, P8b welds on "A", "B", "D" downcomers. No reportable indications. EVT-1 visual inspection of T-Box repair brackets, no indications. VT-1 visual inspection of "C" Downcomer lower section replacement, no indications.
	2002	UT, EVT-1	Reinspection per BWRVIP-18: EVT-1 visual inspections (T-Box welds). No reportable indications. UT examination of Downcomer "A" elbow welds and Downcomer "A", "B", "D" sleeve welds, no indications. EVT-1 visual inspection of T-Box repair brackets, no indications.
	2004	EVT-1, VT-1	Reinspection per BWRVIP-18: EVT-1 visual inspections (T-Box welds). No reportable indications. EVT-1 visual inspection of T-box repair brackets, no indications. VT-1 visual inspection of "C" Downcomer lower section replacement, no indications.
	2006	EVT-1, UT, VT-1	Reinspection per BWRVIP-18-A: EVT-1 visual inspections (T-Box welds). No change in reportable indication on left side of T-Box at Azimuth 240°. No other reportable indications. UT examination of Downcomer "B" elbow welds and Downcomer "A", "B", "D" sleeve welds, no indications. Supplemental EVT-1 for Welds P4d, P8a, and P8b; no reportable indications. EVT-1 visual inspection of T-Box repair brackets, no indications.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Spray Piping (continued)	2008	EVT-1, VT-1	Reinspection per BWRVIP-18-A: EVT-1 visual inspections (T-Box welds, piping bracket welds), no reportable indications. No change in arc strike at 117°. No change in reportable indication on left side of T-Box at Azimuth 240°. EVT-1 visual inspection of T-box repair brackets at 120° and 240°; no reportable indications. VT-1 visual inspection of "C" Downcomer lower section replacement, no reportable indications.
	2010	UT, EVT-1	Reinspection per BWRVIP-18 R1: EVT-1 visual inspections performed of T-Box welds; no reportable indications. No change in arc strike at 117°. No change in reportable indication on left side of T-Box at Azimuth 240°. EVT-1 visual inspection performed of T-box repair brackets at 120° and 240°; no reportable indications. UT examination performed of Downcomer "C" elbow welds and Downcomer "A", "B", "D" sleeve welds; no reportable indications. Supplemental EVT-1 performed for Welds P4a, P4b, P8a, and P8b; no reportable indications.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Spray Piping (continued)	2012	EVT-1, VT-1	Reinspection per BWRVIP-18 R1: EVT-1 visual inspections performed of T-Box welds; no reportable indications. No change in arc strike at 117°. No change in reportable indication on left side of T-Box at Azimuth 240°. EVT-1 visual inspection performed of T-box repair brackets at 120° and 240°; no reportable indications. EVT-1 visual inspections performed of Downcomer "C" elbow welds P4a & P4b and Downcomer "A", "B", "D" P8a & P8b sleeve welds; no reportable indications. VT-1 visual inspection performed of "C" Downcomer lower section replacement, no reportable indications.
	2014	EVT-1	Reinspection per BWRVIP-18 R1: EVT-1 visual inspections performed of T-Box welds; no relevant indications. No change in arc strike at 117°. No change in previous indication on left side of T-Box at Azimuth 240°. EVT-1 visual inspection performed of T-box repair brackets at 120° and 240°; no relevant indications. EVT-1 visual inspections performed of Downcomer "C" elbow welds P4a & P4b and Downcomer "A", "B", "D" elbow welds P4a-d and sleeve welds P5, P6, P7, P8a, & P8b; axial indication noted on BP6 Weld (0.1875") was believed to be a scratch but was evaluated as both an axial and circumferential weld for conservatism and was found to be acceptable for one cycle of operation. No other relevant indications observed.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Spray Piping (continued)	2016	EVT-1, VT-1	Reinspection per BWRVIP-18 R1-A: EVT-1 visual inspections performed of T-Box welds & piping bracket welds; no relevant indications. No change in arc strike at 117°. No change in previous indication on left side of T-Box at Azimuth 240°. EVT-1 visual inspection performed of T-box repair brackets at 120° and 240°; no relevant indications. EVT-1 visual inspections performed of Downcomer "C" elbow welds P4a & P4b and Downcomer "A", "B", "D" elbow welds P4a-d and sleeve welds P5, P6, P7, P8a, & P8b; axial indication noted on BP6 Weld during U3R16 was re-evaluated and confirmed to be a scratch. No other relevant indications observed. VT-1 visual inspection performed of "C" Downcomer lower section replacement, no relevant indications.
	2018	EVT-1	New inspection intervals in BWRVIP-18 R2-A applied starting this outage. Due to past exams performed, the only required inspections for Core Spray Piping were EVT-1 visual inspections performed of repairs and indications: Arc strike at 117°: Unchanged. Linear indication at 238° (on left side of T-Box at 240°): Unchanged. T-Box repair brackets at 120° and 240°: No relevant indications. Also, draw beads were observed on Core Spray Header Piping at 110° and between 230°-240° & 240°-250°, and on Downcomers A, B, C, & D.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Spray Sparger	1981-1997	EVT-1, VT-1	IEB 80-13/GE SIL No. 289 R1S1R1 of welds on sparger. Minor surface indications found. Reinspection performed in 1997 showed no change in indications.
	1998		Reinspection (1998) performed; no new reportable indications.
	2000		Reinspected (2000) per BWRVIP-18 with no reportable indications.
	2004		Reinspection (2004) per BWRVIP-18: EVT-1 and VT-1 inspections of sparger welds, no reportable indications.
	2008		Reinspection (2008) per BWRVIP-18-A: EVT-1 and VT-1 inspections of sparger welds and sparger bracket welds, no reportable indications.
	2012		Reinspection (2012) per BWRVIP-18 R1: EVT-1 and VT-1 inspections of sparger welds and sparger bracket welds, no reportable indications.
	2016		Reinspection (2016) per BWRVIP-18 R1-A: EVT-1 and VT-1 inspections of sparger welds and sparger bracket welds, no relevant indications.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Top Guide (Rim, etc.)	1994	EVT-1, VT-1	VT-1 performed per the recommendations of GE SIL No. 554. No indications found.
	1998		Reinspection (1998) at accessible beams and alignment pins. No reportable indications.
	2000		Baseline EVT-1/VT-1 inspection (2000) per BWRVIP-26 with no reportable indications.
	2004		Reinspection (2004) per BWRVIP-26: Locations 2 and 3 (VT-1) and Location 11 (EVT-1) inspected with no reportable indications.
	2008		Reinspection (2008) per BWRVIP-26-A: Locations 2 and 3 (VT-1) and Location 11 (EVT-1) inspected with no reportable indications.
	2010	EVT-1	Baseline per BWRVIP-183: Location 1 (Grid Beam and Beam-to-Beam Crevice Slot) inspected for five grid beam cells (22-07, 42-11, 42-51, 54-19, 54-43); no reportable indications.
	2012	EVT-1, VT-1	Reinspection per BWRVIP-26-A: Locations 2 and 3 (VT-1) and Location 11 (EVT-1) inspected with no reportable indications.
	2014	EVT-1	Baseline per BWRVIP-183: Location 1 (Grid Beam and Beam-to-Beam Crevice Slot) inspected for five grid beam cells (02-39, 10-27, 14-43, 22-31, 26-19); no reportable indications.
	2016	EVT-1, VT-1	Baseline per BWRVIP-183: Location 1 (Grid Beam and Beam-to-Beam Crevice Slot) inspected for three grid beam cells (06-19, 06-47, 14-51); no relevant indications. Reinspection per BWRVIP-26-A: Locations 2 and 3 (VT-1) and Location 11 (EVT-1) inspected with no relevant indications.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Plate (Rim, etc.)	1994	VT-1, VT-3	VT-1 (1994) performed per the recommendations of GE SIL No. 588. No indications found.
	1998		Reinspection (1998) at accessible beams and alignment pins. No reportable indications.
	2000		Reinspection (2000) per BWRVIP-25: Eighteen (18) of thirty-four holddown bolts (Location 10) were VT-3 inspected from above with no reportable indications.
	2002		Reinspection (2002) per BWRVIP-25: All thirty-four (34) holddown bolts (Location 10) were VT-3 inspected from above with no reportable indications.
	2004		Reinspection (2004) per BWRVIP-25: All thirty-four (34) holddown bolts (Location 10) were VT-3 inspected from above with no reportable indications.
	2006		Reinspection (2006) per BWRVIP-25: All thirty-four (34) holddown bolts (Location 10) were VT-3 inspected from above with no reportable indications. Seventeen (17) plugs were VT-3 inspected with no reportable indications.
	2008	VT-3	Reinspection per BWRVIP-25: All thirty-four (34) holddown bolts (Location 10) were VT-3 inspected from above with no reportable indications. Twenty-two (22) plugs were VT-3 inspected with no reportable indications.
	2010	VT-3	Reinspection per BWRVIP-25: All thirty-four (34) holddown bolts (Location 10) were VT-3 inspected from above with no reportable indications. Fifteen (15) plugs (Location 13) were replaced with newer, more IGSCC-resistant plugs.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Plate (Rim, etc.) (continued)	2012	VT-3	Reinspection per BWRVIP-25: All thirty-four (34) holddown bolts (Location 10) were VT-3 inspected from above with no reportable indications. Fifteen replacement plugs installed during U3R14 (2010) were inspected to confirm that the replacement plug was in place and the hardware has not changed from the as-installed condition. Plug at location 47-33 was not seated and required replacement; replacement plug would not seat flush on the core plate due to interference from the adjacent guide tube tab and required machining prior to installation. Plug at 47-33 will be inspected during U3R16 (2014) to confirm plug is still in place.
	2014	VT-3	Reinspection per BWRVIP-25: All thirty-four (34) holddown bolts (Location 10) were VT-3 inspected from above with no relevant indications. Replacement plug at 47-33 that was installed during U3R15 (2012) was inspected (VT-3) to confirm that the replacement plug was in place and the hardware had not changed from the as-installed condition; no relevant indications observed.
	2016	VT-3	Reinspection per BWRVIP-25: All thirty-four (34) holddown bolts (Location 10) were VT-3 inspected from above with no relevant indications.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Core Plate (Rim, etc.) (continued)	2018	VT-3	Reinspection per BWRVIP-25: All thirty-four (34) holddown bolts (Location 10) were VT-3 inspected from above with no relevant indications. Remaining 114 original core plate plugs (Location 13) replaced with newer, more IGSCC-resistant plugs (plugs were scheduled to reach end of life in 2020 but were replaced early due to length of outage). No problems noted.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

SLC	Prior to 2006	VT-2	(Prior to 2006): Nozzle is leak checked every outage and volumetric exams are conducted per code requirement. No indications noted.
	2006	EVT-2	Bare metal examination (EVT-2) performed per BWRVIP-03, -27. No reportable indications found.
	2008	EVT-2	Bare metal examination (EVT-2) performed per BWRVIP-03, -27. No reportable indications found.
	2010	UT, EVT-2	UT performed on SLC Nozzle N10 (stainless steel safe end-to-pipe weld). Bare metal examination (EVT-2) performed during each refueling outage for Nozzle N10 per BWRVIP-03, -27. No reportable indications found.
	2012	EVT-2	Bare metal examination (EVT-2) performed during each refueling outage for Nozzle N10 per BWRVIP-03, -27. No reportable indications found.
	2014	EVT-2	Bare metal examination (EVT-2) performed during each refueling outage for Nozzle N10 per BWRVIP-03, -27. No reportable indications found.
	2016	EVT-2	Bare metal examination (EVT-2) performed during each refueling outage for Nozzle N10 per BWRVIP-03, -27-A. No relevant indications found.
	2018	EVT-2	UT performed on SLC Nozzle N10 (stainless steel safe end-to-pipe weld). Bare metal examination (EVT-2) performed during each refueling outage for Nozzle N10 per BWRVIP-03, -27-A. No relevant indications found.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Jet Pump Assembly	1991-1997	EVT-1, VT-1, VT-3	1994: VT-3 inspection of sensing lines per GE SIL No. 420, reinspection in 1997 - no indications in either inspection. All riser braces inspected in 1994 per SIL No. 551 - cracks found between riser and riser brace on Jet Pumps 5 and 6. Repair was conducted with installation of Jet Pump Riser Brace Clamp. 1997 reinspection for Jet Pumps 1-10 - no indications found. Jet pump adjusting screws inspected in 1991 per SIL No. 574 - no indications found. Reinspection in 1997 identified a minor indication on Jet Pump No. 6, shroud side, set screw tack weld. Set screw contact verified to be acceptable per GE RICSIL No. 078. Jet pump riser elbow circumferential welds (upper and lower) inspected in 1997 per GE SIL No. 605 R1 - no indications found. Jet pump beams replaced with beams manufactured from a modified heat treatment material in 1994. No inspection has been performed since the replacement.
	1998		Baseline (1998) per BWRVIP-41: EVT-1 of Medium Priority Locations RB-1a-d, RB-2a-d, RS-6, RS-7, RS-8, RS-9, IN-4, MX-2, DF-1 (Jet Pumps 5 & 6), VT-1 of Medium Priority Location WD-1 (Jet Pumps 5 & 6), EVT-1 of High Priority Locations RS-3, DF-2, AD-1, AD-2, AD-3a, AD-3b (Jet Pumps 5, 6, 14, 15, 16); no reportable indications. VT-3 of Riser Brace Clamp repair (Jet Pumps 5 & 6), no reportable indications.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2000 2002	EVT-1, VT-1, VT-3	Baseline (2000) per BWRVIP-41: VT-3 of holddown beam locations BB-1 and BB-2 to verify proper function of beam (all 20 jet pumps) - no indications. EVT-1 of High Priority Locations RS-1, RS-2, RS-3, DF-2, AD-1, AD-2, AD-3a, AD-3b (all jet pumps not examined in 1998); no reportable indications. Baseline (2002) per BWRVIP-41: EVT-1 of Medium Priority Locations RB-1a-d, RB-2a-d, RS-6, RS-7, RS-8, RS-9, IN-4, MX-2, DF-1 (Jet Pumps 3, 4, 7, 8, 9, 10, 15, 16); no reportable indications. VT-1 of Medium Priority Location WD-1 (Jet Pumps 3, 4, 7, 8, 9, 10, 15, 16); inlet-mixer wedge off-center on Jet Pump No. 4, no other reportable indications. EVT-1 of Set Screw Locations AS-1 and AS-2 performed for Jet Pump No. 4, indication observed on shroud-side set screw tack weld. Justification for continued operation (JCO) issued for continued operation of Jet Pump No. 4. VT-3 of Riser Brace Clamp repair (Jet Pumps 5 & 6), no reportable indications.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2004	EVT-1, VT-1, VT-3	Baseline per BWRVIP-41: EVT-1 of Medium Priority Locations RB-1a-d, RB-2a-d, RS-6, RS-7, RS-8, RS-9, IN-4, MX-2, DF-1 (remaining 10 jet pumps - 1, 2, 11, 12, 13, 14, 17, 18, 19, 20); no reportable indications. VT-1 of Medium Priority Location WD-1 (remaining 10 jet pumps plus Jet Pump No. 4); inlet-mixer wedge off-center on Jet Pumps 4, 19, and 20, no other reportable indications. VT-1 of Set Screw Locations AS-1 and AS-2 performed for same 11 jet pumps where WD-1 was examined per GE SIL No. 629; indication on shroud-side set screw for Jet Pump No. 4 not observed, 0.009-inch gap observed between vessel-side set screws and inlet-mixer bellyband for Jet Pump No. 20. JCO issued for continued operation of Jet Pumps 4, 19, and 20.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2006	UT, EVT-1, VT-1, VT-3	Baseline per BWRVIP-41 R1, -138: UT of holddown beam locations BB-1, BB-2, and BB-3 (Jet Pumps 1 thru 20) - no reportable indications. Reinspection per BWRVIP-41 R1: EVT-1 of High Priority Locations RS-1, RS-2, RS-3, DF-2, AD-1, AD-2, AD-3a, AD-3b (Jet Pumps 11 thru 20) - no reportable indications. New baseline per BWRVIP-41 R1: EVT-1 of Medium Priority Locations RS-8 and RS-9 (Jet Pumps 1 and 2) - no reportable indications. VT-3 of Riser Brace Clamp repair (Jet Pumps 5 & 6), no reportable indications. Reinspection per BWRVIP-41 R1: VT-1 of Medium Priority Location WD-1 (Jet Pumps 1 thru 20) - No wear noted; inlet-mixer wedge off-center but contact observed between wedge and restrainer bracket pad on Jet Pumps 2, 4, 5, 7, 8, 12, 13, 17, 19, and 20. VT-1 of Set Screw Locations AS-1 and AS-2 performed for Jet Pumps 1 thru 20. Backlighting identified six (6) set screw gaps greater ranging from 16 to 33 mils in width. Six (6) auxiliary wedges installed on Jet Pumps 4, 7, 10, 16, 18, and 20.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2008	VT-1	Reinspection per BWRVIP-41 R1: VT-1 of Medium Priority Location WD-1 (Jet Pumps 1 thru 20) - No vibration-induced wear noted. Inlet-mixer wedge noted as slightly off-center but with no signs of wear or movement for Jet Pump 1. Inlet-mixer wedge off-center but unchanged since U3C12 RFO (2006) for Jet Pumps 2, 4, 5, 7, 8, 12, 13, 17, 19, and 20. VT-1 of Set Screw Locations AS-1 and AS-2 performed for Jet Pumps 1 thru 20. Backlighting identified four (4) set screw gaps ranging from 7 to 12 mils in width (below 15-mil screening criteria); no additional auxiliary wedges installed. Six (6) auxiliary wedges installed in 2006 inspected to verify contact; no reportable indications.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2010	EVT-1, VT-1, VT-3	Reinspection per BWRVIP-41, Rev. 2: EVT-1 of Medium Priority Locations RS-8 and RS-9 (Jet Pumps 1 thru 20) performed in accordance with BWRVIP Letter No. 2009-202 ("Interim Guidance for Accelerated Inspections of Jet Pump Riser to Riser Brace Welds and Wedges"); no reportable indications. VT-3 performed of Riser Brace Clamp repair (Jet Pumps 5 & 6) that was installed during Unit 3 recovery; no reportable indications. VT-1 performed of Medium Priority Location WD-1 (Jet Pumps 1 thru 20); no vibration-induced wear noted. VT-1 performed of Set Screw Locations AS-1 and AS-2 for Jet Pumps 1 thru 20. Backlighting identified five (5) set screw gaps ranging from 10 to 12 mils in width (below 15-mil screening criteria); no additional auxiliary wedges installed. VT-3 performed of sensing line clamps installed during U3R13 (2008) on Jet Pumps 1-5 and 11-15 performed to confirm that all of the repair hardware is in place and that the hardware has not shifted or changed from the as-installed condition. No relevant indications were observed.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2012	UT, EVT-1, VT-1	Reinspection per BWRVIP-41 R3, -138 R1: UT of holddown beam locations BB-1 and BB-2, (Jet Pumps 1 thru 20) - no reportable indications. Reinspection per BWRVIP-41 R3: EVT-1 of Medium Priority Locations RB-1a-d, RB-2a-d, RS-6, & RS-7 (Jet Pumps 3 thru 8); IN-4, MX-2, & DF-1 (Jet Pumps 3 thru 7); no reportable indications. EVT-1 of High Priority Locations RS-1, RS-2, RS-3, DF-2, AD-1, AD-2, AD-3a, & AD-3b (Jet Pumps 1 thru 10); no reportable indications. VT-1 performed of Medium Priority Location WD-1 (Jet Pumps 1 thru 20); no vibration-induced wear noted. New wear (very minor) from routine service noted on Jet Pump 6. Minor wear on Jet Pumps 10, 15, 17, & 19 was unchanged since last inspection. VT-1 performed of Set Screw Locations AS-1 and AS-2 for Jet Pumps 1 thru 20. Backlighting identified ten (10) set screw gaps (7 existing and 3 new) nine of which ranged from 6 to 15 mils in width (below 15-mil screening criteria). One set screw gap (Jet Pump 12 Vessel-Side set screw (VS-SS)) measured at 18 mils, which exceeded the 15-mil screening criteria for installation of an auxiliary spring wedge but did not exceed the 20-mil criteria above which the potential exists for high level jet pump vibration. Engineering evaluation concluded that Jet Pump 12 is acceptable as-is for one fuel cycle; no additional auxiliary wedges installed. Two new set screw tack weld indications (Jet Pumps 5 & 7) observed but redundant tack weld still intact; no repair required.

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Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2014	VT-1, VT-3	Reinspection per BWRVIP-41 R3: VT-1 performed of Medium Priority Location WD-1 (Jet Pumps 1 thru 20); Observable downward movement of the wedge but no wear was noted on Jet Pump 5. Discernable additional wedge wear since U3R15 (2012) was noted on Jet Pump 6. Minor wear on Jet Pumps 10, 15, 17, & 19 was unchanged since last inspection. No other relevant indications observed. VT-1 performed of Set Screw Locations AS-1 and AS-2 for Jet Pumps 5 and 6. Backlighting identified two (2) set screw gaps (new gap on JP 5 VS-SS measured 7 mils, existing gap on JP 6 SS-SS shrunk from 11 mils to 4 mils), both of which were below 15-mil screening criteria; no repair required. Set screw gap of 11 mils observed on JP 5 SS-SS during U3R15 had closed shut. One new set screw tack weld indication (JP 6 VS-SS, inboard) observed but redundant outboard tack weld still intact; no repair required. Existing tack weld indication (JP 5 VS-SS, inboard) was unchanged from U3R15, redundant outboard tack still intact; no repair required. Six (6) auxiliary wedges installed during U3R12 (2006) reinspected (VT-1/VT-3) to verify contact; no change of condition observed. VT-1/VT-3 performed of Riser Brace Clamp repair (Jet Pumps 5 & 6) that was installed during Unit 3 recovery; no reportable indications.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2016	VT-1	Reinspection per BWRVIP-41 R3: VT-1 performed of Medium Priority Location WD-1 (Jet Pumps 1 thru 20); New minor wear at wedge to restrainer top side vessel side (VS) and shroud side (SS) for JP 1. Minor additional wear VS and new wear SS for JP 6. Minor new wear noted on wedge to restrainer at SS end for JP 19 Minor wedge wear on JPs 5, 10, 15, 17, 19, & 20 unchanged. No other relevant indications observed. VT-1 performed of Set Screw Location AS-1 for ten locations where gaps were last observed. Nine (9) set screw gaps observed, all under 15-mil criteria except for JP 6 (VS-SS, 20 mils). Gap was closed to 0 mils by main wedge tapping; no repair required. VT-1 performed of Set Screw Location AS-2 where tack weld cracking was observed. Tack welds for JPs 5, 6, & 7 examined. Cracked tack weld on JP 5 (VS-SS, inboard) reclassified as a shadow from a weld ripple and cracks on JP 6 (VS-SS, inboard) & JP 7 (SS-SS, inboard) were unchanged. Redundant outboard tack weld still intact on JP 6 and JP 7; no repair required.

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Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2018	UT, EVT-1, VT-1, VT-3	Reinspection per BWRVIP-41 R3, -138 R1: UT of holddown beam locations BB-1, BB-2, and BB-3, (Jet Pumps 1 thru 20) - no relevant indications. Limited coverage on the beams for JPs 2 and 13 will require a deviation disposition. Additionally, the beam for Jet Pump #20 was found to be loose with no tension when UT equipment was placed on the beam prior to examination. No looseness was observed for the beams for Jet Pumps 1 through 19. The scope was expanded for Jet Pump #20 to examine for signs of damage and blow-by was observed at the inlet elbow to transition piece. The decision was then made to examine this area for all twenty jet pumps, and blow-by was observed on six jet pumps (7 & 8: minimal with no corrective action required, 10 & 16: borderline with additional examinations recommended during the next refueling outage, 19&20: moderate with corrective action recommended). The Group 2 holddown beams on Jet Pumps 19 & 20 were replaced with Group 3 beams, the inlet-mixer was removed, the inlet riser transition piece was cleaned, and both jet pumps were re-tensioned.

Reactor Internals Inspection History

Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2018 (continued)	UT, EVT-1, VT-1, VT-3	Reinspection per BWRVIP-41 R3: EVT-1 of Medium Priority Locations RB-1a-d, RB-2a-d, RS-6, RS-7, RS-8, & RS-9 (Jet Pumps 7 thru 12); IN-4, MX-2, & DF-1 (Jet Pumps 8 thru 12); no reportable indications. EVT-1 of High Priority Locations RS-1, RS-2, RS-3, DF-2, AD-1, AD-2, AD-3a, & AD-3b (Jet Pumps 11 thru 20); no reportable indications. VT-3 performed of Riser Brace Clamp repair (Jet Pumps 5 & 6) that was installed during Unit 3 recovery; no reportable indications. Reinspection per BWRVIP-41 R3: Full re-baseline prior to EPU for Restrainer Bracket Assembly for Jet Pumps 1-20. VT-1 performed of Medium Priority Location WD-1; New minor wedge wear on three jet pumps (JPs 3, 12, &19); no changes in previously recorded wedge wear. VT-1 performed of Set Screw Location AS-1 for 34 locations where aux wedges are not installed. Eleven (11) set screw gaps observed, two gaps which exceeded the 15-mil screening criteria were dispositioned by analysis. VT-1 performed of Set Screw Location AS-2 for 68 locations where aux wedges are not installed. Two cracks observed during past outages (JP 6 (VS-SS, inboard) & JP 7 (SS-SS, inboard)) were unchanged. Redundant outboard tack weld still intact on JP 6 and JP 7; no repair required.

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Plant: Browns Ferry Unit 3

Jet Pump Assembly (continued)	2018 (continued)	UT, EVT-1, VT-1, VT-3	Six (6) auxiliary wedges originally installed during U3R12 (2006) reinspected (VT-1/VT-3) to verify contact. Minor wear noted on aux wedge for Jet Pump #10 (shroud-side), otherwise no change of condition observed.

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Plant: Browns Ferry Unit 3

Jet Pump Diffuser	N/A	N/A	N/A
CRD Guide Tube	1994	EVT-1, VT-3	Guide tubes vacuumed and inspected during U3C6 Refueling Outage - no reportable indications noted.
	2004		Baseline (2004) per BWRVIP-47: 10 control rod guide tubes examined. VT-3 visual examination of Locations CRGT-1 and FS/GT-ARPIN-1, MVT-1 visual examination of Locations CRGT-2 and CRGT-3; no reportable indications.
	2006		New baseline (2006) per BWRVIP-47: 13 control rod guide tubes examined. VT-3 visual examination of Locations CRGT-1 and FS/GT-ARPIN-1, EVT-1 visual examination of Locations CRGT-2 and CRGT-3; no reportable indications.
	2008		Baseline (2008) per BWRVIP-47-A: 3 control rod guide tubes examined. VT-3 visual examination of Locations CRGT-1 and FS/GT-ARPIN-1, EVT-1 visual examination of Locations CRGT-2 and CRGT-3; no reportable indications.
	2010		Baseline (2010) per BWRVIP-47-A: 3 control rod guide tubes examined. VT-3 visual examination of Locations CRGT-1 and FS/GT-ARPIN-1, EVT-1 visual examination of Locations CRGT-2 and CRGT-3; no reportable indications.
CRD Stub Tube	N/A	N/A	N/A
In-Core Housing	N/A	N/A	N/A

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SRM/IRM Dry Tubes	1994	VT	Dry tubes replaced with modified design which is resistant to cracking. Inspections will be scheduled after dry tubes have reached the expected 20-year life (2014).
	2014	VT-1	Baseline inspection per GE-H SIL No. 409 R3 of all twelve SRM/IRM Dry Tubes (8 IRMs, 4 SRMs). IRM plunger 32-29 not seated in Top Guide; dry tube replaced. IRM plungers at three (3) locations and SRM plungers at four (4) locations were partially-seated; JCO performed by vendor to operate as-is for one fuel cycle (U3C17). Plans are to replace these seven dry tubes during U3R17 in 2016.
	2016	VT-1	IRM 32-29 (dry tube replaced during U3R16) examined and full plunger engagement into the Top Guide confirmed. Dry tubes replaced for IRMs 24-29, 24-37, & 32-37 and SRMs 16-21, 16-45, 40-21, & 40-45. Plunger engagement measured for four remaining original IRM dry tubes (16-13, 16-53, 48-13, &48-53) and projections are adequate to operate as-is for one fuel cycle (U3C18). Plans are to replace these four dry tubes during U3R18 in 2018. Baseline inspection per GE-H SIL No. 409 R5 for LPRM 56-17; full plunger engagement into the Top Guide confirmed.
	2018	VT-1	Four remaining original IRM dry tubes (16-13, 16-53, 48-13, & 48-53) were replaced proactively even though extrapolations of measurements confirmed they would not fully disengage from the Top Guide during the next fuel cycle.

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Instrument Penetrations	2008	VT-2	Visual leak check is performed during each refueling outage. Bare-metal examination (enhanced VT-2) performed for DM welds (nozzle-to-safe end) associated with nozzles N11A&B, N12A&B, and N16A&B. No reportable indications.
	2010	UT, VT-2	UT performed on RPV Instrument Nozzles N11A&B, N12A&B, and N16A&B (stainless steel safe end-to-pipe weld). Visual leak check (VT-2) performed during each refueling outage for Nozzles N11A&B, N12A&B, and N16A&B. No reportable indications.
	2012	UT, VT-2	UT performed on RPV Instrument Nozzles N11A&B, N12A&B, and N16A&B (stainless steel safe end-to-pipe weld). Visual leak check (VT-2) performed during each refueling outage for Nozzles N11A&B, N12A&B, and N16A&B. No reportable indications.
	2014	UT, VT-2	UT performed on RPV Instrument Nozzles N11A&B, N12A&B, and N16A&B (stainless steel safe end-to-pipe weld). Visual leak check (VT-2) performed during each refueling outage for Nozzles N11A&B, N12A&B, and N16A&B. No reportable indications.
	2016	UT, VT-2	UT performed on RPV Instrument Nozzles N11A&B, N12A&B, and N16A&B (stainless steel safe end-to-pipe weld). Visual leak check (VT-2) performed during each refueling outage for Nozzles N11A&B, N12A&B, and N16A&B. No reportable indications.

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Instrument Penetrations (continued)	2018	UT, VT-2	UT performed on RPV Instrument Nozzles N11A&B, N12A&B, and N16A&B (stainless steel safe end-to-pipe weld). Visual leak check (VT-2) performed during each refueling outage for Nozzles N11A&B, N12A&B, and N16A&B. No reportable indications.

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Feedwater Sparger	1998	VT-1	Feedwater sparger nozzles examined (VT-1) per NUREG-0619; no recordable indications.
	2004	VT-3	A retaining pin has dropped into the top plate on Feedwater Sparger End Bracket at Azimuth 185°. Disposition performed to leave as-is. No other reportable indications were noted.
	2006	VT-1, VT-3	Reinspection: VT-3 visual examination performed of Feedwater Sparger End Bracket at Azimuth 185°. Additional wear noted as the retaining pin had worn its way into the feedwater casting and would soon begin to wear into the vessel attachment bracket. A hardware repair for one-cycle was installed to mitigate further wear. This repair is currently being evaluated to determine if a permanent repair will be required during the U3C13 Refueling Outage in 2008. Also, feedwater sparger nozzles examined (VT-1) per NUREG-0619; no recordable indications.
	2008	VT-3	Reinspection: VT-3 visual examination performed of eleven (11) unrepaired Feedwater Sparger End Brackets. No wear observed under the retaining pin for the end bracket at all 11 locations. VT-3 visual examination performed for repair installed in 2006 on Feedwater Sparger End Bracket at 185°. Minor wear noted on bracket-to-repair clamp interface. Evaluation prepared by vendor allows operation for one cycle as-is. Reinspection during the U3C14 Refueling Outage in 2010 will be scheduled to determine if any additional wear is observed.

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Feedwater Sparger (continued)	2010	VT-3	Reinspection: VT-3 examination performed of eleven (11) unrepaired Feedwater Sparger End Brackets. Minor wear observed under the retaining pin for the end bracket at one new location (235°) when compared to U3R13 (2008) inspection results. Qualitative assessment performed to accept-as-is for one cycle. Additional inspections during U3R15 in 2012 will be scheduled to determine the extent of any additional wear. VT-3 examination also performed for repair installed during U3R12 (2006) on Feedwater Sparger End Bracket at 185°. Repair bracket had rotated approximately 10° counter-clockwise from the as-left condition from U3R13; bracket was rotated to original position. No additional wear was noted on bracket-to-repair clamp interface.
	2012	VT-3	Reinspection: VT-3 examination performed of eleven (11) unrepaired Feedwater Sparger End Brackets. Minor wear observed under the retaining pin for the end bracket at one new location (65°) when compared to U3R14 (2010) inspection results. No change in wear at existing location (235°). Qualitative assessment performed to accept-as-is for one cycle. Reinspections during U3R16 (2014) will be scheduled to determine the extent of any additional wear. VT-3 examination also performed for repair installed during U3R12 (2006) on Feedwater Sparger End Bracket at 185°. No additional wear noted on bracket-to-repair clamp interface. Also, a bent deformed feedwater nozzle originally noted during U3R12 (2006) on the 150° Feedwater Sparger was observed and accepted as-is.

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Feedwater Sparger (continued)	2014	VT-1, VT-3	Reinspection: VT-3 examination performed of eleven (11) unrepaired Feedwater Sparger End Brackets. No change in wear at 65° location when compared to U3R15 (2012) inspection results; wear at 235° location was slightly worse when compared to U3R15 inspection results. Qualitative assessment performed to accept-as-is for one cycle. Reinspections during U3R17 (2016) will be scheduled to determine the extent of any additional wear. VT-3 examination also performed for repair installed during U3R12 (2006) on Feedwater Sparger End Bracket at 185° location. Repair was slightly rotated but otherwise there was no change when compared to U3R15 results. Feedwater sparger nozzles examined (VT-1) per NUREG-0619; no relevant indications. Also, a bent deformed feedwater nozzle originally noted during U3R12 (2006) on the 150° Feedwater Sparger and unchanged from U3R15 was observed and accepted as-is.
	2016	VT-3	Reinspection: VT-3 examination performed of eleven (11) unrepaired Feedwater Sparger End Brackets. No change in wear at 65° and 235° locations when compared to U3R16 (2014) inspection results; no other relevant indications. Qualitative assessment performed to accept-as-is for one cycle. Reinspections during U3R18 (2018) will be scheduled to determine the extent of any additional wear. VT-3 examination also performed for repair installed during U3R12 (2006) on Feedwater Sparger End Bracket at 185° location; no relevant changes noted.

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Feedwater Sparger (continued)	2018	VT-3	Reinspection: VT-3 examination performed of eleven (11) unrepaired Feedwater Sparger End Brackets. New wear (minor) was identified at the 245° and 305° locations. Wear at the 65° location was reclassified as a shadow. There was no change in wear at the 235° location when compared to U3R17 (2016) inspection results; no other relevant indications. Qualitative assessment performed to accept-as-is for one cycle. Reinspections during U3R19 (2020) will be scheduled to determine the extent of any additional wear. VT-3 examination also performed for repair installed during U3R12 (2006) on Feedwater Sparger End Bracket at 185° location; no relevant changes noted.

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Vessel ID Brackets	1997	VT-3	Jet Pump Riser Brace Welds (20) examined (VT-3): No recordable indications.
	1998	EVT-1, MVT-1	Jet Pump Riser Brace Welds (4) examined (EVT-1). Also, Core Spray Piping Brackets (8) examined (MVT-1): No recordable indications.
	2000	EVT-1	Core Spray Piping Brackets (8) examined (EVT-1): No recordable indications.
	2002	EVT-1	Jet Pump Riser Brace Welds (16) examined (EVT-1): No recordable indications.
	2004	EVT-1, VT-3	Jet Pump Riser Brace Welds (20) examined (EVT-1): No recordable indications. Also, VT-3 visual examinations performed of Steam Dryer Support Brackets (4). Abnormal wear and a lap of smeared metal noted on lead-in to Steam Dryer Bracket at Azimuth 275°. Main bracket also shows some missing material on the right side. JCO issued to support return to service.
	2006	VT-3	Feedwater Sparger Brackets (12) examined (VT-3): No recordable indications.
	2008	EVT-1	Core Spray Piping Brackets (8) examined (EVT-1): No recordable indications.

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Vessel ID Brackets (continued)	2012	EVT-1	Jet Pump Riser Brace Welds (12) examined (EVT-1): No recordable indications. Steam Dryer Support Brackets (4) examined (EVT-1): Indications noted during U3R11 (2004) were unchanged; no other recordable indications. Feedwater Sparger Brackets (12) examined (EVT-1): No recordable indications.
	2014	EVT-1	Jet Pump Riser Brace Welds (14) examined (EVT-1): No relevant indications. Core Spray Piping Brackets (8) examined (EVT-1): No relevant indications.
	2016	EVT-1	Core Spray Piping Brackets (8) examined (EVT-1): No relevant indications.
	2018	EVT-1	Jet Pump Riser Brace Welds (12) examined: No relevant indications observed.
LPCI Coupling	N/A	N/A	Not applicable to this plant.
Steam Dryer	1998	VT-3	(1991): During Unit 3 Restart, cracking was found in 3 of 8 Unit 3 Steam Dryer Drain Channel to Skirt Attachment Welds. Repair of the cracked welds and reinforcement of all 8 welds for future mitigation performed. (1998): Welds associated with Drain Channel #1 (Azimuth 50°) were visually inspected (VT-3) in accordance with

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	2002	VT-3	vendor requirements. No reportable indications were noted. (2002): Welds associated with Drain Channel #2 (Azimuth 130°) were visually inspected (VT-3) in accordance with vendor requirements. No reportable indications were noted.
Steam Dryer (continued)	2004	VT-1, VT-3	The following locations were visually inspected (VT-1) in accordance with BWRVIP-139 and GE SIL 644 R1: • Horizontal and vertical welds which outline the steam dryer outer bank • Cover plate between the outer hood vertical plate and the support ring • Dryer manway @ 90° No reportable indications were noted. • Stabilizer/Tie Bars (original) - Visually inspected (VT-1) for damage; no deformation noted. • Stabilizer/Tie Bar repairs - Repairs made during U3C11 Mid-Cycle Outage in 2003 were visually inspected (VT-1) to verify that replacement tie bars and attachment welds were intact. No reportable indications were noted. The following locations were inspected in accordance with INPO OE: • Leveling screw tack welds @ 5° & 185° visually inspected (VT-1) - No reportable indications were noted. • Dryer surfaces visually inspected (VT-3) - Light Noble Metal coating observed in many areas, some with flaking of crud deposits (NRI). Welds associated with Drain Channel #3 (Azimuth 230°) visually inspected (VT-1) in accordance with BWRVIP-139. No reportable indications were noted.

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Steam Dryer (continued)	2006	VT-1, VT-3	The following locations were visually inspected (VT-1) in accordance with BWRVIP-139 and GE SIL 644 R1: • Weld seams associated with the outer side of the inner banks - No reportable indications. • Stabilizer/Tie Bars (original) - Visually inspected (VT-1) for damage; no deformation noted. • Stabilizer/Tie Bar repairs - Repairs made during U3C11 Mid-Cycle Outage in 2003 were visually inspected (VT-1) to verify that replacement tie bars and attachment welds were intact. No reportable indications were noted.
	2008	VT-1, VT-3	The following locations were visually inspected (VT-1) in accordance with BWRVIP-139 and GE SIL 644 R1: • Stabilizer/Tie Bars - No apparent change to deformation noted on tie bars between Banks 2 & 3 and 4 & 5: All 3 locations (0°, center, 180°). Evaluation performed to accept-as-is until Extended Power Uprate (EPU) implementation in 2010. Replacement tie bars between Banks 3 & 4 examined; no reportable indications. • Welds associated with Drain Channel #1, #2, #3, and #4 (Azimuths 50°, 130°, 230°, and 310°) visually inspected (VT-1) in accordance with BWRVIP-139. No reportable indications were noted. VT-3 visual examination performed of accessible steam dryer surfaces to look for potential damage as indicated by increased moisture carryover. No reportable indications were noted.

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Steam Dryer (continued)	2010	VT-1	The following locations were visually inspected (VT-1) in accordance with BWRVIP-139 and GE SIL 644 R1: • Stabilizer/Tie Bars - Four tie bars (TB-2/3-01, -02, TB-4/5-01, -02) exceeded acceptance criteria as regards to horizontal and vertical deflection and were replaced with EPU-qualified replacements. Two additional tie bars (TB-2/3-03 and TB-4/5-03 were also replaced with EPU-qualified replacements to maintain dryer symmetry. • Drain Channel Welds • Vertical Bank Welds • Lower Horizontal Bank Welds • Upper Horizontal Bank Welds • Lifting Rods • Upper Support Ring With the exception of the tie bars, no reportable indications were noted.
		VT-1	The following locations were inspected in accordance with INPO OE: • Leveling screw tack welds at 5 and 185 degrees were VT-1 inspected; no relevant indications were noted. • Dryer hood exterior surfaces above the support ring were VT-1 inspected; light to heavy scale deposits were observed.
	2012	VT-1	The following locations were visually inspected (VT-1) in accordance with BWRVIP-139 and GE SIL 644 R1: • Welds associated with Drain Channel #3 (Azimuth 230°) • Tie Bars replaced during U3R14 (2010): TB-2/3-01, -02, -03, TB-4/5-01, -02, -03 • Tie Bars replaced during U3C11

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			Midcycle (2003): TB-3/4-01, -02, -03 • Original Tie Bars: TB-1/2-01, -02, TB-5/6-01, -02 No relevant indications noted.
Steam Dryer (continued)	2014	VT-1, VT-3	Original tie bars (TB-1/2-01, -02, TB-5/6-01, -02) visually inspected (VT-1/VT-3) in accordance with BWRVIP-139 and GE SIL 644 R1. No distortion observed for all four tie bars. No relevant indications observed for TB-1/2-01, -02; Weld drip crack adjacent to TB-5/6-01 and crater crack adjacent to TB-5/6-02 were unchanged when compared to U3R15 (2012) results. Steam Dryer Banks #1 through #6 End Bank Plates and Steam Dams exterior surfaces on the 0 and 180 degree ends were examined (VT-3) looking for unusual or heavy crud and/or oxide deposits from the tops to the Mid-Support Ring. No unusual or heavy deposits observed.
	2016	VT-1	Original tie bars (TB-1/2-01, -02, TB-5/6-01, -02) visually inspected (VT-1) in accordance with BWRVIP-139-A and GE SIL 644 R1. No distortion observed for all four tie bars. No relevant indications observed for TB-1/2-01, -02; Weld drip crack adjacent to TB-5/6-01 and crater crack adjacent to TB-5/6-02 were unchanged when compared to U3R16 (2014) results. Welds associated with #2 Drain Channel were visually inspected (VT-1). Linear indication (1.2 inches) observed for Weld DC-2-V1 (Right-Side Vertical Weld); acceptable as-is for one fuel cycle per BWRVIP-139-A evaluation. BWRVIP-139-A "Red Welds" (welds associated with dryer integrity) were

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Steam Dryer (continued)	2018	VT-1	visually inspected (VT-1). Linear indication (0.5 inches) observed for Weld B6V-02 (Bank End Panel to Hood Vertical End Panel Weld); acceptable as-is for two fuel cycles per BWRVIP-139-A evaluation. No other relevant indications observed.
		N/A	Replacement steam dryer procured from GE-Hitachi and installed in preparation for EPU implementation during the next fuel cycle.

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Steam Separator	2008	VT-1	Pre-EPU inspection of Steam Separator Standpipe Welds performed to look for fatigue cracking. Linear indication identified on the top of the Lower Gusset between Shroud Head Bolts #14 and #15. Engineering Evaluation allows operation for one cycle as-is with no repair required. Reinspection during the U3C14 Refueling Outage in 2010 will be scheduled to determine if the indication has changed.
		VT-1	Pre-EPU inspection of all 48 Shroud Head Bolts performed to look for wear in locking pin window and on mid-span and top support ring gussets. Material deformation noted on the indicator window of Shroud Head Bolt #42. Engineering Evaluation allows operation for one cycle as-is with no repair required. Reinspection during the U3C14 Refueling Outage in 2010 will be scheduled to determine if the indication has changed.
	2010	VT-1	Linear indication observed during U3R13 (2008) on the top of the Lower (Mid-Span) Gusset between Shroud Head Bolts #14 and #15 was re-examined; no change was noted when compared to the previous examination. Reinspection during U3R15 in 2012 will be scheduled to determine if the indication has changed.
		VT-1	Material deformation noted on the indicator window of Shroud Head Bolt #42 during U3R13 (2008) was re-examined; a slight increase noted in the distortion of the window. Reinspection during U3R15 in 2012 will be scheduled to determine if the indication has changed.

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Steam Separator (continued)	2012	VT-3	Steam Separator tie bars (cross bracing) examined for signs of cracking (Reference: INPO OE 30657). No relevant indications were observed on the cross bracing. Also, a damaged (dented) stand pipe (first one on the south (0-degree) side in Row #1) was observed during tie bar inspections; dent was very minor and was acceptable as-is.
		VT-1	Linear indication observed during U3R13 (2008) on the top of the Lower (Mid-Span) Gusset between Shroud Head Bolts #14 and #15 was re-examined; no change was noted when compared to the previous examination. Reinspection will be scheduled to determine if the indication has changed whenever the steam separator is inspected.
		VT-1	Material deformation noted on the indicator window of Shroud Head Bolt #42 during U3R13 (2008) was re-examined; no change was noticed from the previous inspection. Reinspection will be scheduled to determine if the indication has changed whenever the steam separator is inspected.
	2018	VT-1	Pre-EPU inspections per NEDO-33159: • A linear indication on the Separator Mid-Support Ring Gusset between Shroud Head Bolts #14 & #15 was unchanged when compared to previous data. • Material deformation on the indicator pin window for Shroud Heat Bolt #42 was unchanged when compared to previous data. • A damaged stand pipe (Row A, Stand Pipe 1) was unchanged when compared to previous data. • Window and pin wear noted on the

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Steam Separator (continued)	2018 (continued)		majority of installed shroud head bolts was the result of normal operation. No other relevant indications were observed.
DM Welds - BWRVIP-75-A Cat. C	2010	N/A	No Cat. C DM Welds were inspected during Unit 3 Refueling Outage 14 (U3R14).
	2012	N/A	No Cat. C DM Welds were inspected during Unit 3 Refueling Outage 15 (U3R15).
	2014	Manual PA-UT	One Cat. C DM Weld was inspected during Unit 3 Refueling Outage 16 (U3R16) with no recordable indications.
	2016	N/A	No Cat. C DM Welds were inspected during Unit 3 Refueling Outage 17 (U3R17).
	2018	Manual UT	One Cat. C DM Weld was inspected during Unit 3 Refueling Outage 18 (U3R18) with no recordable indications.
DM Welds - BWRVIP-75-A Cat. D	2010	N/A	No Cat. D DM Welds were inspected during Unit 3 Refueling Outage 14 (U3R14).
	2012	N/A	No Cat. D DM Welds were inspected during Unit 3 Refueling Outage 15 (U3R15).
	2014	N/A	No Cat. D DM Welds were inspected during Unit 3 Refueling Outage 16 (U3R16).
	2016	N/A	No Cat. D DM Welds were inspected during Unit 3 Refueling Outage 17 (U3R17). NOTE: BFN Unit 3 has only two (2) Cat. D DM Welds. These are stainless steel (SS) flued head to cast SS valve

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			bodies.
	2018	N/A	No Cat. D DM Welds were inspected during Unit 3 Refueling Outage 18 (U3R18).

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Shroud	1993	EVT-1 and UT	EVT-1 baseline *(H1-H7)*. Indications in several circumferential welds and ring segment welds. No indications on vertical welds. UT selected areas on H1 and H5. Installed clamp repair on H2/H3. Full structural margins on non-repaired welds.
	1995	UT	Re-inspected several areas of H1, H6a, H6b, with no indication growth. H9, 100% , no indications (inspected by Siemens) NRI. H5 inspected by GE in 2 areas, no growth noted. 2 repair brackets inspected with no indications.
	1996	UT	Re-inspected H1 and H5 with no indication growth. UT baseline of H4, H6A, H6B and H7. No indications on H7. Minor indications on H4, H6A and H6B with no impact to structural margins. VT-1 and VT-3 inspected 3 repair brackets with no indications.
	1998	VT-1/VT-3	No inspections of welds was performed. Inspected 7 of 12 total shroud clamps with no indications. This completed the initial inspection of all 12 clamps installed in 1993.
	2000	UT/EVT-1/ VT-1/VT-3	Re-inspected H1 and H5 (UT) with no indication growth. Re-inspected (EVT-1) OD side of V1 and V2 with no indications. VT-1 and VT-3 inspected 3 repair brackets with no indications.
	2002	VT-1/VT-3	No shroud weld inspections were performed. Inspected 4 of 12 total shroud repair clamps with no indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Shroud (continued)	2004	VT-1/VT-3	Visually examined 2 shroud vertical welds and 4 of 12 total shroud repair brackets with no indications noted.
	2006	VT-1/VT-3	Visually examined 2 shroud vertical welds (V1 & V2) and 4 of 12 total shroud repair brackets with no indications/degradation noted.
		UT	Performed UT of Core shroud horiz. Welds H4, H6a, H6b, & H7 all of which are <10% cracked.
	2008	EVT-1	Core Shroud Vertical Welds V3, V4, V7, and V8 ID & OD. (NRI)
		VT-1/VT-3	Shroud repair clamps, 4 of 12 (NRI)
	2010	VT-1/VT-3 **UT**	Shroud Repair clamps 4 of 12 (NRI) H1 upper & lower, H5, V1, V2 Flaw found in V1 outside HAZ potentially IASCC ~ 2.9" long. V2 – (NRI) H1 upper 100% coverage, 75.5% flawed H1 lower 83% coverage, 10.3% flawed H5 100% coverage, 17.49% flawed During H1 lower inspection, flaws noted on the ID of the core shroud in the HAZ of the sparger support brackets at 30,60,90,120,150,240,270, &300 degree Azimuths. (RI) Not all were seen visually due to access restriction.
	2012	VT-1/VT-3	Shroud Repair Clamps 4 of 12 (NRI)
		EVT-1	Shroud Vertical Welds V5 and V6 from the OD and ID. V5 OD NRI, V5 ID 11 flaws identified. V6 OD 45 flaws, V6 ID 11 flaws. Most flaws perpendicular to the vertical welds.
	2012	EVT-1	New small RI in shroud next to Core Spray to shroud weld P8b-10.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Shroud (continued)	2014 2016	VT-3/VT-1 EVT-1 VT-3/VT-1 **UT**	Shroud Repair Clamps 4 of 12 Visual of H4 from OD, 17 short (< 2" each) flaws found perpendicular to the weld in the HAZ. Shroud Repair Clamps 4 of 12. Circumferential Welds H4, H5, H6a, H6b and H7 and Vertical Welds V1, V2, V3, V4, V6, V7 and V8 were UT examined in accordance with BWRVIP-03, Rev. 18 approved UT technique for both IGSCC indications parallel to welds (BWRVIP-76, Rev. 1-A) and off-axis cracking as described in Interim Guidance 2016-030. A significant amount of scanning for off-axis flaws were performed on H4, H5, H6a, H6b, V1, V2, V3, V4 and V6 and were well within the requirements of the interim guidance. No UT exams were performed on V5 due to inspection tooling malfunction issues late in the refuel outage. Results are summarized as follows: BWRVIP-76, Rev. 1-A Exams: V1(CW) 79% coverage: NRI V1(CCW) 48% coverage: NRI V2(CW) 80% coverage: NRI V2(CCW) 53% coverage: NRI V3(CW) 48% coverage: NRI V3(CCW) 42% coverage: NRI V4(CW) 42% coverage: NRI V4(CCW) 42% coverage: NRI H4(upper)85% coverage: 5.33% flawed H4(lower)92% coverage: 7.34% flawed V6(CW) 68% coverage: NRI V6(CCW) 67% coverage: NRI H5(upper) 100% coverage: 5.24% flawed H5(lower) 100%coverage: 19.03% flawed V7(CW) 83% coverage: NRI

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Shroud (continued)			V7(CCW) 91% coverage: NRI V8(CW) 91% coverage: NRI V8(CCW) 91% coverage: NRI H6a(upper) 100% coverage: 2.85% flawed H6a(lower) 100%coverage: NRI H6a(upper) 100% coverage: NRI H6b(lower) 100%coverage: 5.59% flawed H7(upper) 52% coverage: 9.97% flawed H7(lower) 52%coverage: NRI Off-Axis Cracking Interim Guidance 2016-030: V3(CW) – 48% coverage: 1 indication *Indication was < 4 inches.* V3(CCW) 42% coverage: NRI V4(CW) 42% coverage: NRI V4(CCW) 42% coverage: NRI H4(upper) 43% coverage: 11 indications # of Through-Wall Indications: 6 *All indications < 4 inches.* H4(lower) 56% coverage: 13 indications # of Through-Wall Indications: 9 2 indications > 4 inches (4.14" & 4.98") V6(CW) 68% coverage: 11 indications # of Through-Wall Indications: 6 0 indication > 4 inches V6(CCW) 67% coverage: 18 indications # of Through-Wall Indications: 8 2 indications > 4 inches (5.44" and 12.89") H5(upper) 43% coverage: 19 indications # of Through-Wall Indications: 9 1 indication > 4.5 inches *(end of crack not determined)* H5(lower) 43%coverage: 32 indications # of Through-Wall Indications: 0 *All indications < 4 inches.* V7(CW) 87% coverage: NRI V7(CCW) 80% coverage: NRI V8(CW) 91% coverage: NRI V8(CCW) 91% coverage: NRI

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Shroud (continued)			H6a(upper) 28% coverage: NRI H6a(lower) 28%coverage: NRI H6a(upper) 28% coverage: NRI H6b(lower) 28%coverage: NRI
	2018	VT-3/VT-1	No new RIs There were no planned inspection of the core shroud this outage except for the continuous inspections of the repair brackets including SRB015, SRB195, SRB255, and SRB315. 100% coverage was achieved with no recordable indications. NRI
Shroud Support	1993	VT	VT of accessible areas on H8, H9, and access hole covers with no indications.
	1995	UT	UT baseline of H9 and VT reinspection of portions of H8 with no indications noted. VT-1 inspection of shroud support Access Hole Covers with no indications noted.
	1996	EVT-1	EVT-1 examination of Access Hole Covers with no indications noted.
	1998	EVT-1	Inspected Access Hole covers with no indications noted
	2002	EVT-1	Inspected both Access Hole Cover welds with no indications noted. Visually inspected approximately 18% of top side of H8 with no indications noted.
	2004	UT	UT 50% of H9 with no relevant indications noted.
	2006	EVT-1	Both Access Hole Covers – No indications noted.
	2008	EVT-1	H8 at 0 & 180 degrees (NRI)

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Shroud Support (continued)	2010	EVT-1	Both access hole covers (NRI)
	2012	N/A	None
	2014	UT	H9 Weld inspected using manual encoded technique for ~17% of the circumference. NRI
	2016	EVT-1	Both Access Hole Covers – NRI
	2018		No scheduled inspections
Core Spray Piping	1980's to Present	MVT-1 and EVT-1	IEB 80-13 of piping and welds in annulus. One indication on the header piping. Full structural margins. Inspected per BWRVIP-18 in Spring 1996 with no new indications.
	1998	EVT-1	Performed re-inspection of Core Spray piping and spargers per BWRVIP-18. No new cracking noted. Previous cracking had no significant length changes.
	2000	EVT-1	Performed re-inspection of Core Spray piping and spargers per BWRVIP-18. No new cracking noted. Previous cracking had no significant length changes.
	2002	EVT-1	Inspected 100% of the Core Spray piping creviced welds and 25% of the elbow welds per BWRVIP-18. No new cracking noted. Re-inspection of a previously identified crack showed some small increase in length.
	2004	EVT-1	Inspected 100% of the Core Spray piping creviced welds and 25% of the elbow welds per BWRVIP-18. No new

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Spray Piping (Continued)			cracking noted. Re-inspection of a previously identified crack showed no discernible change in length.
	2006	EVT-1 & UT	Inspected 100% of the Core Spray piping creviced welds and 25% of the elbow welds per BWRVIP-18-A. No new cracking noted except for the P3c-270 piping butt weld (unique to BNP-1). Additional cracking on the lower side of the weld prompted emergent UT to interrogate the entire circumference. Cracking extent estimated to be 80% of the Circ. Repair installed IAW BWRVIP-19-A and BWRVIP-84 requirements.
	2008	EVT-1	All P1, P2, P3, P5, P6, P7, P8 & 9 P4's 1 PB (NRI)
	2010	EVT-1/VT-3 EVT-1	PB @30 deg (NRI) 2-P1& P2's, 4-P3,P4,P5,P6,P7, 8-P8's (NRI) one repair clamp P3c-RC (NRI) except for RI on P5-350, 0.45" long
	2012	EVT-1	2(P1,P2) 4(P3,P4,P5,P6,P7,P8a,P8b) all NRI except P5-350 exist RI, P8b-10 new RI (in Core Shroud).
		VT-3/VT-1	PB-330 & 150 NRI Piping Repair Clamp NRI
	2014	EVT-1	2(P1,P2) 4(P3,P4,P5,P6,P7,P8a,P8b) and repair clamp P3c-270RC all NRI P5-350 & P8b-10 - RI no growth noted. PB-210 – NRI
	2016	EVT-1	2(P1,P2) 4(P3,P4,P5,P6,P7,P8a,P8b) and repair clamp P3c-270RC all NRI P5-350 & P8b-10 - RI no growth noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		EVT-1/VT-1	PB-150 – NRI
	2018	EVT-1/VT-3	No new RIs P4a-190, P4b-190, P4c-190, P4d-190, PB-030, P8b-010 had no new indications and no change in existing, previously identified RIs. P5-350 which previously had an RI first identified in B118R1, is evaluated as NRI in B1R22.
Core Spray Spargers	1980's to Present	MVT-1, EVT-1, and VT-3	IEB 80-13 of welds on piping and spargers. One indication on sparger T-Box. Inspected per BWRVIP-18 in Fall, 1996 with no growth in old indication and no new indications.
	1998	MVT-1, EVT-1, and VT-3	Re-inspected per BWRVIP-18 with no new indications. Previously identified crack had no significant length changes.
	2000	MVT-1, EVT-1, and VT-3	Re-inspected per BWRVIP-18 with no new indications. Previously identified crack had no significant length changes.
	2002	EVT-1, VT-1	Inspected sparger tee welds, sparger drain welds, sparger end cap welds and 25% of the sparger nozzle welds and support brackets in accordance with BWRVIP-18. No new indications were reported and no change was noted in a previously reported indication.
	2004	EVT-1, VT-1	Inspected 100% of sparger tee welds, 100% of the sparger end cap welds, 50% of the sparger drain welds, and 25% of the sparger nozzle welds and support brackets in accordance with BWRVIP-18. No new indications were reported and no change was noted in a previously

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Spray Spargers (continued)			reported indication.
	2006	EVT-1, VT-1	Inspected 100% of sparger tee welds. Existing crack on S2a-350 determined to be same length. Crack in a tack weld on a sparger nozzle was found and 100% sample expansion to all nozzle welds were performed per BWRVIP-18-A. Two additional cracked tack welds were identified.
		VT-1	2 S1, 4 S2, 4 S4, 2 Noz tack welds 5 SB, Sparger Nozzles SN170-02c-53c, 1 SD (NRI)
	2008	VT-1/VT-3	Newly installed repair clamp replacing S2a-350 and S2b-350 welds.
	2010	EVT-1	2-S1, 4-S2, 52-S3, 4-S4, 5-SB, 1-SD (NRI) 3 cracked tack welds, 45a, 24c, 30d previously discovered. Flaws noted on the ID of the core shroud in the HAZ of the sparger support brackets at 30,60,90,120,150,240,270, &300 degree Azimuths. (RI) Not all were seen visually due to access restriction.
	2012	VT-1/EVT-1	All Sparger Nozzles examined. Sparger Nozzle Tack weld flaws Sparger A, 1 existing Sparger B, 1 existing Sparger C, 1 existing, 4 new Sparger D, 1 existing, 9 new Sparger Brkts 211,241,270,299,330 NRI Drain SD-190-1 NRI
	2012	VT-1	

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Spray Spargers (continued)	2014	EVT-1	2 S1, 4 S2, 4 S4 - NRI Sparger T-Box Repair Clamp - NRI
		VT-3/VT-1	Sparger Brackets @ 61, 90, 119, & 150 degrees. Cracking noted in the Shroud adjacent the brackets. RI Sparger A Loop 52 Nozzles - NRI 2 S1, 2 S2a, 2 S2b, 2 S4a, 2 S4b, 1 SD-190-2, 1 S2ab-350RC (repair clamp), all NRI
	2016	VT-1	4 Sparger Brackets at 211°, 241°, 270°, 299° & 330°. Relevant Indications (RI) in the Core Shroud adjacent the brackets of the SB-211° and 241° were observed.
		VT-3	SD350-1 – **NRI**.
		EVT-1	Sparger A Loop 52 Nozzles (SN-170-02c through 53c), SN10-45a & SN190-30d – **NRI**
		EVT-1/VT-3	2 each on B-Loop (S1, S4a, S4b), one S2a and one S2b. S2ab-350RC (repair clamp)- **NRI**
	2018	VT-1 / VT-3	No new RIs SN190-01d-52d, SD350-2, SB-061, SB-090, SB-119, SB-150, SB-211, and SB-241. No new indications were observed and all previous RIs showed no change with the exception of SB-150. With improved cleaning, better field of view and clarity with HD cameral, and improved camera position, indication #2 has been identified to wrap around the right side (cw) of the bracket, which was not identified previously.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			Core Spray brackets are bound in 1B11-0054.
Top Guide Grid	1993-96	VT-1	VT-1 of 14 cells in 1993; no indications. 1996 re-inspected with no indications. VT-3 of wedges, holddown clamps, eccentric aligners, and general surface areas in 1993. One minor indication on eccentric aligner & dowel pin hole.
	2000	VT-1	VT-1 of 2 Hold Down assemblies with no indications noted.
	2004	VT-1	VT-1 of 2 Hold Down assemblies with no indications noted.
	2006	EVT-1	Inspected three (3) top guide grid beam intersections in conjunction with dry tube inspections at the same intersections. No indications noted.
	2008	VT-1 EVT-1	All 4 hold down latches 3 Grid Beam Intersections from 2 cells each (NRI)
	2010	VT-1 EVT-1 VT-1/VT-3	2 hold-down latches (NRI) 3 grid cells (NRI) 3 in-core dry tubes (NRI)
	2012	EVT-1	7 grid cells (NRI) 3 in-core dry tubes (NRI)
	2014	EVT-1	3 grid cells (NRI)
	2016	EVT-1	2 grid cells (NRI)
	2018	VT-1/VT-3	Two top guide hold down latches were inspected VT-1 during the B1R22 refuel outage. No relevant indications were observed. In addition, an overview, general inspection of the Top Guide

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Top Guide Grid (Continued)			support structure/pin was performed in response to the Hatch OE. Review was verifying pin receiver condition for possible cracking. None observed. Design different than Hatch. Design difference concurred with BWRVIP RIC call on 3/24/2018. 4 dry tubes were replaced (all engaged) With 1 being fully inspected (NRI)
Core Plate (Rim, etc.)	1993	VT-1	Holddown bolts from topside and partial surface areas. No indications.
	2004	N/A	No inspections performed in 2004.
	2006	UT	Inspected 100% of the core plate bolts using a plant specific methodology that determines bolt existence through the core plate support ring. Equivalent to visual exam.
	2008	N/A	No inspection in 2008
	2010	N/A	No inspection in 2010
	2012	N/A	No inspection in 2012
	2014	N/A	No inspection in 2014
	2016	UT	Inspected 100% of the core plate bolts using a plant specific methodology that determines bolt existence through the core plate support ring described in Deviation Disposition DD-47, Rev. 1.
	2018	N/A	No inspection in 2018
SLC	1988	LP	No examinations performed on internal piping. Section XI LP performed on nozzle to safe end welds. No indications.
	2000	LP	Section XI LP performed on nozzle to safe end weld. No indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
SLC (continued)	2004	VT-2	Direct VT-2 examination of nozzle to safe end weld during system pressure test. No leakage noted.
	2006	VT-2	Direct VT-2 examination of nozzle to safe end weld during system pressure test. No leakage noted.
	2008	VT-2	Direct VT-2 examination of nozzle to safe end weld during system pressure test. No leakage noted.
	2010	VT-2	Direct VT-2 examination of nozzle to safe end weld during system pressure test. No leakage noted.
	2012	VT-2	Direct VT-2 examination of nozzle to safe end weld during system pressure test. No leakage noted.
	2014	VT-2	Direct VT-2 examination of nozzle to safe end weld during system pressure test. No leakage noted.
	2016	VT-2	Direct VT-2 examination of nozzle to safe end weld during system pressure test. No leakage noted.
	2018	VT-2	No Leakage Detected to date.
Jet Pump Assembly	1993-96	VT-1	Riser brace brackets done once per period. Wedges, set screws, tack welds, sensing lines and sensing line supports VT per various SILs. Jet pump beams replaced in Fall, 1993. No indications noted, as well as in old jet pump beams. Transition areas inspected in 1995 with no indications.
	1998	EVT-1	Inspected all RS-1, RS-2 and RS-3 welds and associated draw beads.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Jet Pump Assembly (continued)			Cracks found on 3 risers with lengths ranging from 1-1/8" to 5-3/4". Analysis concluded structural margin acceptable for one cycle of operation. Inspected all 10 TS-3 welds (safe end transition piece to safe end extension) with no indications.
	2000	EVT-1	Inspected previously identified cracking on 3 RS-1 welds with no change in cracking.
	2002	EVT-1	Inspected 100% of hold-down beams, 25% of the IN-4 welds, 20% of the MX-2 welds, 20% of the WD-1 areas, 30% of the riser brace welds and re-examined the previously identified indications on the RS-1 welds of risers "D", "G" and "K". No new indications were noted and no significant changes were noted in the previously identified indications.
	2004	EVT-1	Inspected 25% of the IN-4 welds, 30% of the MX-2 welds, 80% of the WD-1 areas, 15% of the riser brace welds, 50% of the adapters welds AD-1 & AD-2, 35% of the restrainer RS-6 and RS-7 welds, 30% of the riser brace to riser pipe RS-8 & RS-9 welds, 60% of the riser elbow RS-1 welds and re-examined the previously identified indications on the RS-1 welds of risers "D", "G" and "K". No new indications were noted and no significant changes were noted in the previously identified indications.
	2006	UT & EVT-1 & VT-1	UT all Beams for BB-1 region. EVT-1 for all Beams for BB-2 & BB-3 regions for additional cycle due to tooling issues. No growth noted of cracking located in the Riser Elbows RS-1 welds D, G, & K. Also inspected RS-1, RS-

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Jet Pump Assembly (continued)			1A, RS-2 & RS-3 on 2 Risers. Two RS-6, one RS-7, RS-8, & RS-9, three IN-4, three MX-2, , two riser braces, and VT-1 of all wedges WD-1. No additional indications noted
	2008	EVT-1	4 IN-4, 3 MX-2, 2 RB-2a,b,c,d 4 RS-1a, 2 RS-2, 2 RS-3, 2 RS-6, 3 RS-7,8,9 10 RS-1 **New RI's found on A & F risers.** No growth found on K riser.
		VT-1	2 WD-1 (NRI)
		UT	ALL Beams BB-1, 2a, 2b, 3a, 3b (NRI)
		VT-1/VT-3	2 newly installed repair clamps on JP Risers D & G (thermal sleeve to elbow welds)
	2010	EVT-1	3-IN4, 4-MX2, 7-RS1&1a, 2RS1 repair clamps, 1-RS2, 1-RS3, 1-RS6, 1-RS7, 7-RS8, 7-RS9, 3-RB1a-d, 1RB2a-d, 18-WD1 (NRI) JPSL1,10,11,20 (NRI)
		VT-1/VT-3	RS-1 on JPA, F, K have previous flaws with no growth noted this outage.
	2012	EVT-1	2IN4, 2MX2, 1RB-2a-d, 8RS-1, 2RS1 repair clamps, 3RS-1a, 2RS-2, 2RS-3, 1RS6-9
		VT-1/VT-3	2WD1, 1SL NRI except for the known flaws in the RS-1 for A,F,K which show no change from last outage.
	2014	EVT-1	2 IN-4, 2 MX-2, 2 RB-1a-d, 2 RB-2a-d, 8 RS-1, 2 RS-1a, 2 RS-1 repair clamps, 2 RS-2, 2 RS-3, 1 RS-6, 1 RS-7, 1RS-8, 1 RS-9, 3 WD-1 w/rods, 3 JP sensing lines. Riser Elbows (RS-1) A, F, & K flaws show no growth. All other NRI
	2016	EVT-1	1 IN-4, 1 MX-2, 2 RB-1a-d, 2 RB-2a-d,

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Plant: Brunswick Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Jet Pump Assembly (continued)			8 RS-1, 3 RS-1a, 2 RS-1/RS-1a repair clamps, 1 RS-2, 1 RS-3, 1 RS-6, 1 RS-7, 1RS-8, 1 RS-9, 1 WD-1 w/rods, 2 JP sensing lines. Riser Elbows (RS-1) A, F, & K flaws show no growth. All other NRI
	2018	VT-3 EVT-1	No new RIs and no changes to existing RIs. JP#14 assembly (VT-3) Jet Pump Inlet welds:JP06IN-4, JP07IN-4, Jet Pump Mixer welds: JP06MX-2, JP07MX-2, Jet Pump Sensing Lines: JP10-SL, JP11-SL, JP14-SL Jet Pump Wedge: JP06WD-1, JP07WD-1, JP14WD-1 Jet Pump Riser welds: JPARS-1, JPBRS-1, JPCRS-1, JPDRS-1RC, JPERS-1, JPFRS-1, JPGRS-1RC, JPHRS-1, JPJRS-1, JPKRS-1, JPARS-1a, JPBRS-1a, JPCRS-1a, JPARS-2, JPBRS-2, JPARS-3, JPBRS-3, JPGRS-6, JPGRS-7, JPGRS-8, JPGRS-9 Jet Pump Riser Brace welds: JPDRB-2a, JPDRB-2b, JPDRB-2c, JPDRB-2d
	2018	UT	UTs for JP (01-20) BB-1, BB-2a, BB-2b, BB-3a, BB-3b (NRI)
	2018 (continued)		Following the Browns Ferry OE, per AR 2190338, an additional "looseness" check was performed on all Jet Pump Beams during the UT inspection. None were found to be loose.
Jet Pump Diffuser	start-up to present	VT-3	Adapter and diffuser welds inspected once per period. Last inspected in 1995 with no indications.

Reactor Internals Inspection History

Plant: Brunswick Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Jet Pump Diffuser (Continued)	1998	MVT-1	Inspected 20 of 40 DF-1 and DF-2 welds with no indications.
	2000	EVT-1	Inspected 10 AD-1 and AD-2 welds with no indications.
	2004	EVT-1	Inspected 50% of the DF-2 diffuser welds. No indications noted.
	2006	EVT-1	Inspected three AD-1 & AD-2, and three DF-1 & DF-2 welds
	2008	EVT-1	4 AD-1, 4 AD-2, 3 DF-1, 3 DF-2 (NRI)
	2010	EVT-1	4 DF-1, 4 DF-2, 4 AD-1, 4-AD-2 (NRI)
	2012	EVT-1	3 AD-1, 2 AD-2, 2 DF-1, 3 DF-2 (NRI)
	2014	EVT-1	3 AD-1, 4 AD-2, 2 DF-1, 3 DF-2 (NRI)
	2016	EVT-1	4 AD-1, 4 AD-2, 1 DF-1, 4 DF-2. One AD-2 on Jet Pump 18 with relevant indications. Scope Expansion deferred Spring 2018 refuel outage as approved on Deviation Disposition DD-75. No relevant indications on all other welds inspected (NRI).
	2018 2018 (continued)	EVT-1	No new RIs and no changes to existing RIs. Jet Pump Diffuser welds: JP01 AD-1, JP02 AD-1, JP03 AD-1, JP04 AD-1, JP01 AD-2, JP02 AD-2, JP03 AD-2, JP04 AD-2, JP17 AD-2, JP18 AD-2, JP19 AD-2, JP20 AD-2, JP06 DF-1, JP07 DF-1, JP09 DF-2, JP10 DF-2, JP11 DF-2 **JP(05-16) AD-2(as part of Scope Expansion per CR 2010968 as approved on Deviation Disposition DD-75)**

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Plant: Brunswick Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
CRD Guide Tube	1993	VT-3	Inspected accessible surfaces of approximately 75% of total population with no indications.
	2002	VT-1, VT-3	Inspected the CRGT-1, -2, -3 and FS/GT-ARPIN-1 components on seven guide tubes. No indications noted.
	2004	N/A	No inspections performed in 2004.
	2006	N/A	No inspection performed in 2006
	2008	EVT-1, VT-1, VT-3	Inspected the CRGT-1, -2, -3 and FS/GT-ARPIN-1 components on seven guide tubes. No indications noted.
	2010	N/A	Baseline was complete last outage. No additional inspection currently required.
	2012	EVT-1	14 Guide Tube CRGT-2 & CRGT-3 inspected 13 NRI, 1 RI in CRGT-2 Replaced the guide tube with new one.
	2014	-	Baseline completed in 2012.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
CRD Stub Tube	1993	VT-3	Inspected accessible surfaces of approximately 75% of total population with no indications.
	2004	N/A	No inspections performed in 2004.
	2006	N/A	No inspections performed in 2006.
	2008	VT-3	9 stub tube to vessel welds (NRI)
	2010	N/A	No inspections performed in 2010
	2012	VT-3	Lower Plenum examined in the vicinity of the removed guide tube. Inspected all accessible stub tube/RPV welds, CRD Housing to stub tubes. ..NRI
	2014	VT-3	Lower Plenum examined in the vicinity of the removed guide tube. Inspected all accessible stub tube/RPV welds, CRD Housing to stub tubes. ..NRI
In-Core Housing	Fall, 1993	VT	No indications noted.
	2004	N/A	No inspections performed in 2004.
	2006	N/A	No inspections performed in 2006
	2008	VT-3	9 stub tube to CRD housing welds (NRI)
	2010	N/A	No inspections performed in 2010
	2012	VT-3	3 In-core housing to RPV NRI
	2014	VT-3	5 In-Core Housing to RPV - NRI
Dry Tubes	Fall, 1993	VT	No indications. Replaced in 1988. Scheduled for inspection in 2008.
	2004	N/A	No inspections performed in 2004.

Reactor Internals Inspection History

Plant: Brunswick Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Dry Tubes (Continued)	2006	VT-1	Inspected three dry tubes per SIL 409 in conjunction with top guide grid beam intersections. No indications noted.
	2008	VT-1	Inspected three dry tubes per SIL 409 in conjunction with top guide grid beam intersections. No indications noted.
	2010	VT-1/VT-3	3 dry tubes inspected per SIL 409 (NRI)
	2012	VT-1/VT-3	3 dry tube exams per SIL 409 (NRI)
	2014	VT-1/VT-3	3 dry tube exams per SIL 409 (NRI)
	2016	VT-1/VT-3	1 dry tube exams per SIL 409 (NRI) 3 dry tubes were replaced.
	2018	VT-1/VT-3	1 dry tube exam per SIL 409 (NRI) 4 dry tubes were replaced.
Instrument Penetrations	1988 and 1995	LP	Inspections of external piping performed once per interval in accordance with ASME Section XI. No indications.
	2004	VT-2	Instrument nozzles were VT-2 examined as part of the RPV pressure test. No leakage noted. EVT-1/VT-3 exam performed on inner radius of Jet Pump instrumentation nozzles N8A & N8B.
	2006	VT-3	Inspected Inner nozzle radius. No degradation noted.
	2008	EVT-1/VT-3	Inner radius of N11a,b & N16a,b (NRI)
	2010	EVT-1/VT-3	Inner radius of N11a,b & N12a,b (NRI)
	2012	N/A	None
	2014	EVT-1	Inner radius of N12A (NRI)

Reactor Internals Inspection History

Plant: Brunswick Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Instrument Penetrations (Continued)	2018	VT-1	Inner radius of N9 CRD Return (NRI) Inner radius of N16A 75% coverage (NRI)
Vessel ID Brackets	1993-1996	VT-1 in beltline area; VT-3 other areas	Section XI inspections of core spray, feedwater sparger, dryer and surveillance capsule holder brackets performed once per interval. Last inspection Fall, 1996. No indications.
	2002	EVT-1/VT-1	Inspected 6 of 20 jet pump brace arm pad to RPV welds and 4 of 8 core spray header bracket to RPV welds. No indications were noted.
	2004	EVT-1/VT-1	Inspected 4 steam dryer hold down lugs, 2 of 8 Core Spray header bracket to RPV welds, 8 Feedwater End Bracket to RPV welds, 8 Jet Pump Riser Brace Arm to RPV welds, and 2 Surveillance Specimen Holder Bracket to RPV welds. No indications were noted.
	2006	EVT-1/VT-1	Inspected both guide rod brackets, two steam dryer support brackets, two surveillance specimen holder brackets, two jet pump riser braces, and one core spray piping support bracket (upper and lower). No indications were noted.
	2008	EVT-1 VT-1 VT-3	Core Spray Bracket @ 330 deg JP Riser Braces for H, J, & K risers (NRI) Lower Surv. Spec. bracket @ 300 deg. (NRI) Two (2) Steam Dryer Support Brackets Upper Surv. Spec. bracket @ 300 deg. (NRI)

Reactor Internals Inspection History

Plant: Brunswick Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Vessel ID Brackets (continued)	2010	EVT-1	Core Spray Bracket @ 30 deg JP Riser Braces for B, C, & D (NRI) Lower Specimen brkt @ 30 deg (NRI) Two Dryer Support Brackets (NRI) Two Dryer Hold-down Brackets (NRI) Upper Specimen brkt @ 300 deg. (NRI)
	2012	VT-1/VT-3/ EVT-1	Core Spray Piping Bracket @ 150 deg JP Riser Braces for E, & H (NRI) Lower Specimen brkt @ 120 deg (NRI) Two Dryer Support Brackets (NRI) Four Dryer Hold-down Brackets (NRI) Upper Specimen brkt @ 120 deg. (NRI)
	2014	VT-1/VT-3/ EVT-1	Core Spray Piping Bracket @ 210 deg JP Riser Braces for B, & E (NRI) Lower Specimen brkt @ 300 deg (NRI) Two Dryer Support Brackets (NRI) Upper Specimen brkt @ 300 deg. (NRI) Feedwater Sparger End Brackets (NRI) Specimen Brackets @ 120 deg. (NRI) Specimen Brackets @ 30 deg. Found ajar from lower bracket. Removed and Installed to proper fit.
	2016	VT-1/VT-3/ EVT-1	Core Spray Bracket @ 150°(NRI) JP Riser Braces for C and J (NRI) Upper Specimen bracket @ 30° (NRI) Lower Specimen bracket @ 30° (NRI) Feedwater Sparger End Brackets (NRI) One Dryer Support Brackets (NRI) Two Guide Rod Brackets (NRI) Upper & Lower Core Spray Header Bracket (B-Loop) @ 300° (NRI)
	2018	VT-1/VT-3/ EVT-1	SSLB-120, SSUB-120 (NRI) complete engagement and no visible degradation. No new RI's and no change to existing RIs: SDSB-035, SDHB-035, SDHB-145, SDHB-215, SDHB-325 (NRI), CSAHB-030U, CSAHB-030L (NRI)

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Plant: Brunswick Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Vessel ID Brackets (continued)	2018 (continued)		SRB015, SRB195, SRB255, SRB315 (NRI) PB-030 (NRI) JPDRB-1a, JPDRB-1b, JPDRB-1c, JPDRB-1d, JPHRB-1a, JPHRB-1b, JPHRB-1c, JPHRB-1d, (NRI) Jet Pump Riser Braces for D and H Feedwater Sparger End Brackets (NRI) Upper RV 180-270- 100%, N16A-75%, Upper RV 270-360-100%, Annulus 195-100%, Annulus 225-100%, Annulus 255-100%, Annulus 285-100%, Annulus 315-100%, Annulus 345-100%, NRI
Steam Dryer	3/2002	EVT-1/VT-3	Inspected two known cracks at SW-V4 & SW-V8. Inspected Guide Rod assy dryer bank 1 H4 and all four lifting eye rod supports. Also inspected upper support ring.
	9/2002	VT-3	Inspected overall condition of the steam dryer during B114M1 outage (partial uprate). No significant degradation noted.
	2004	VT-1	Baseline inspection of 100% exterior weld HAZ's. Repaired/replaced all upper tie bars. Added gusset plates to exterior banks 1 and 5. Reinforced welds of cover plates to upper support ring. Weld repaired most of the existing cracks.
	2005	VT-1	Mid-cycle outage inspected repairs and modifications.
	2006	VT-1	Inspected welds in accordance with BWRVIP-139, repairs, modifications, and outer bank areas.

Reactor Internals Inspection History

Plant: Brunswick Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Steam Dryer (Continued)	2008	VT-1	52 of 143 steam dryer welds. Numerous small cracking found on upper support ring- not significant. One previously repaired fatigue crack is cracked again- not significant at this time. Major crack found in lifting eye at 35 degrees. Installed repair this outage.
	2010	VT-1	30 components on the steam dryer inspected. No growth of existing flaws. 2 new flaws on the modified man hole cover (small). One new flaw in the skirt next to the NW drain pipe elbow (NWDP-1)
	2012	VT-1 (89)	31 components of the steam dryer were inspected. No change in existing flaws. New flaw identified at the bottom of a drain channel weld to the skirt. Fatigue crack about 2.2" long. (DC348-L). Some new indications on the cover plate to upper support ring. Small flaws along the ring. Nothing significant.
	2014	VT-1 (89)	36 welds were inspected. No change in existing flaws. Five (5) minor flaws with no change and one (1) flaw determined to be non-relevant. Reclassified as NRI.
	2016	VT-1 (89)	38 welds were inspected. No change in existing flaws. One (1) minor relevant indication (IGSCC) observed on a dryer skirt horizontal seam weld. One (1) relevant indication observed on a Lifting Eye tack weld, scope expansion did not observe any relevant indications (NRI).

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Steam Dryer (Continued)			No change after at least 2 subsequent inspections on all other unrepaired relevant indications.
	2018	VT-1	No new recordable indications and no changes in existing RIs on the included examined components: NW-V5, NW-V9, SW-V4, SW-V9, NE-V4, NE-V8, NE-V9, SE-V4, SE-V9, DB1 H-4, DB2 H-5, DB3 H-3, DB4 H-1, DB4 H-6, DB5 H-4, DB1-OBSW, DB5-OBSW, CPDB-270, LE-35, LE-145, LE-215, JBW-145, JBW-325, 90RB/CP-L, 270RB/MH-R, TB-5, TB-10, DSHS, DSVS-0, DC158-R, DC322-L, DC348-L, NEDP-2, SWDP-1, NWDP-3

Reactor Internals Inspection History

Plant: Brunswick Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
LPCI Coupling	NA	NA	Not applicable to Brunswick.
Dissimilar Metal (DM) Welds			
CAT A	2008	UT	N9 CRD Nozzle (1)
CAT B	-	-	None
CAT C	-	-	None
CAT D	-	-	Feedwater: N4C (3), N4D (3) Recirc: 28-A (3) , 28-B (4) Inst. Nozzle N8B (1)
	2010		
CAT A	-	-	4 (N12A, N2B, N2D, N2F Nozzle to safe end weld)
CAT B	-	-	None
CAT C	-	UT	1 (N1A Nozzle to safe end weld)
CAT D	-	-	None
CAT A	2012	UT	CAT A - 0
CAT B			CAT B - 0
CAT C			CAT C - 0
CAT D			CAT D - 9
CAT A	2014	UT	CAT –A, 0 CAT –B, 0

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Plant: Brunswick Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
CAT B CAT C CAT D			CAT –C, 0 CAT –D, 2 1. (1B11N9-RPV-FW1CRD274) ASME B-F 2. (1G31FF-14-FWRWCUB3B) ASME B-J
CAT A CAT B CAT C CAT D	2016	UT	CAT –A, 0 CAT –B, 0 CAT –C, 0 CAT –D, 6
CAT D	2018	UT	CAT – D, N4a(3 flaws repaired with weld overlay) & N4d(3 flaws repaired with weld overlay)

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	Spring 2016	UT	81.3% Upper Side and 80.0% Lower Side of H3 73.4% Upper Side and 73.4% Lower Side of H4 Two indications were detected on the lower side of the H3 weld. Indications were a total of 4.33" in length. One additional indication was detected on the upper side of the H4 weld with a length of 1.19". Each indication had characteristics associated with IGSCC/IASCC.
	Spring 2014	UT	17.8% Upper Side and 16.5% Lower Side of H6A 18.8% Upper Side and 21.6% Lower Side of H7 No indications identified
	Fall 2005	UT	44% of H3 Lower Side, 56.6% H4 Both Sides, 17.3% H6A Both Sides and @ 20% H7 Both Sides. One indication with characteristics associated with IGSCC/IASCC was detected on the lower side of the H4 weld. Indication is 1.11" in length. Due to disassembly of the JP11 mixer, a VT-3 examination was performed on accessible areas of H10, H11 and H12. No indications.
	Spring 2004	UT	15.1% of H3 Lower Side and 34.6% of H4. Due to equipment failures this examination was deferred to next outage.
	Spring 1998	UT	All accessible areas of H3, H4, H6A, H7. No indications.
	Spring 1995	UT	Baseline per BWRVIP-01. All accessible areas of H3, H4, H6A and H7. No indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Shroud Support	Spring 2018	UT	13% of H8 (shroud support plate to shroud weld) and 27.4% of H9 (shroud support plate to vessel weld). No relevant indications noted.
	Spring 2014	EVT-1	SSAHC @ 0°. No indications noted.
	Spring 2012	EVT-1	15% of the top of H8 and 18.5% of the top of H9. No indications noted.
	Fall 2008	VT-1	SSAHC @ 0°. No indications noted.
	Spring 2007	EVT-1	15% of the top of H8 and 18.5% of the top of H9. No indications were noted
	Fall 2005	VT-1	SSAHC @ 0°. No indications
	Fall 2002	VT-1	SSAHC @ 0°. No indications
	Spring 1998	UT	10.7% of total circumference of H8 (shroud support plate to shroud weld) and 15.4% of H9 (shroud support plate to vessel weld). No indications.
	Fall 1996	VT-1	Sect XI. Period 3 of 10yr interval. RF05/6 Attachment welds to vessel and shroud plate to shroud weld. No indications.
	Spring 1995	VT-3	SSHAC @ 180°. No indications.
	Spring 1992	VT-1	Shroud shelf weld. No indications (SIL 572)

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping	Spring 2018	EVT-1	Six piping welds inspected to transition into BWRVIP-18-2A inspection frequency. Hydrolyze cleaning. No indications.
	Spring 2016	EVT-1	All target welds (P3a and P5) with 25% of remaining piping locations. No other indications discovered.
	Spring 2014	VT-1 VT-3 EVT-1	All target welds (P3a and P5) with 25% of remaining piping locations. Indication discovered on P8A was inspected with no change in indication. No other indications discovered.
	Spring 2012	EVT-1	All target welds (P3a and P5) with 25% of remaining piping locations with the exception of P3a(L)-270°, P3a®-270° and P3a®-90° (Ref. CR-GGN-2013-06541). Indication discovered on P8A as documented on INR GGNS-IVVI-12-02.
	Spring 2010	EVT-1	All target welds (P3a and P5) with 25% of remaining piping locations with the exception of P3a(L)-270°, P3a®-90° and P3a(L)-90° (Ref. CR-GGN-2013-06541). No indications
	Fall 2008	EVT-1	All target welds (P3a and P5) with 25% of remaining piping locations. No indications
	Spring 2007	EVT-1	All target welds (P3a and P5) with 25% of remaining piping locations. No indications
	Fall 2005	EVT-1	All target welds (P3a and P5) with 25% of remaining piping locations. No indications.
	Spring 2004	EVT-1	All target welds (P3a and P5) with 25% of remaining piping locations. No indications.
	Fall 2002	EVT-1	All target welds (P3a and P5) with 25% of remaining piping locations. No indications.
	Spring 2001	EVT-1	All accessible P2, P2a, P3a, P5. 25% of remaining piping locations. No indications.
	Fall 1999	EVT-1	All accessible P2, P2a, P3a, P5. 25% of remaining piping locations. No indications.

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Core Spray Piping (Continued)	Spring 1998	EVT-1	All accessible piping locations. No indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger	Spring 2018	VT-1	VT-1 performed on four previous indications. SB-07A, CSS-S5(a)L-172, and SB-12D-260 had no apparent changes. After hydrolyzing, the SB-15C weld appeared to be a good tack weld and the indication was reclassified as non-relevant. Reference INR GGNS IVVI-18-01 R1, INR GGNS IVVI-18-02, and INR GGNS IVVI-18-03.
	Spring 2016	EVT-1/ VT-1	Performed VT-1 examinations of previous indications at Cap Screw 7A and 15C. No discernible changes noted on the indications. Performed VT-1 examinations of accessible areas of the lower sparger welds and accessible areas of Core Spray Sparger Brackets (SB) were inspected with no indications. Indication of rolled metal located on 172° Lower Boss Pad. Bolt thread protruding from backside of Bracket 12 Bolt "D".
	Spring 2014	EVT-1/ VT-1	Performed examinations of previous indications at Cap Screw 7A and 15C and tack weld indications on alignment sleeve. No discernible changes noted on the indications.
	Spring 2012	EVT-1/ VT-1	All core spray sparger target welds and all accessible areas of the upper sparger welds. Accessible areas of Core Spray Sparger Brackets (SB) were inspected with no indications. Performed examinations of previous indications at Cap Screw 7A and 15C. No changes noted. Tack weld indications on alignment sleeve documented on INR GGNS-IVVI-12-03 and INR GGNS-IVVI-12-05.
	Spring 2010	VT-1	Performed examinations of previous indications at Cap Screw 7A and 15C. No changes noted.
	Fall 2008	EVT-1/ VT-1	All core spray sparger target welds and all accessible areas of the lower sparger welds. Accessible areas of Core Spray Sparger Brackets (SB). No indications noted. Broken tack welds @ Cap Screw 7A and 15C previously reported.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger (Continued)	Fall 2005	VT-1/ EVT-1	All core spray sparger target welds and all accessible areas of the upper sparger welds. Accessible areas of Core Spray Sparger Brackets (SB). No indications noted. Broken tack welds @ Cap Screw 7A previously reported. Additional broken tack weld identified at Cap Screw 15C.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger (continued)	Fall 2002	VT-1/ VT-3	All core spray sparger target welds and all accessible areas of the lower sparger welds. No indications noted. All accessible areas of Core Spray Brackets (SB). Broken tack welds @ Cap Screw 7A previously reported.
	Fall 1999	VT-1/ VT-3	Upper Sparger- Accessible areas of spargers, tee boxes, brackets and supports. No indications noted.
	Spring 1998	EVT-1/ CS-VT-1	Accessible areas of spargers, tee boxes, brackets and supports. Broken tack welds @ Cap Screw 7A
	Fall 1996	VT-3	Augmented exam per IE 80-13. No indications noted.
Top Guide (Rim, etc.)	Spring 2018	EVT-1	Accessible surfaces and fasteners on two top guide cells and rim welds (000 and 180). No indications noted. Previous indication on top guide cell 32-33 was reclassified as non-relevant after hydrolyze cleaning and further inspection. INR GGNS IVVI-18-04
	Spring 2012	EVT-1	Accessible surfaces and fasteners. Indication documented under INR GGNS-IVVI-12-06.
	Spring 2007	VT-3	Accessible surfaces and fasteners. No indications noted.
	Spring 2001	VT-3	Accessible surfaces and fasteners. No indications noted.
	Fall 1996	VT-3	Accessible surfaces and fasteners. No indications noted.

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Plant: **Grand Gulf Nuclear Station Unit 1**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Plate (Rim, etc.)	Spring 2007	VT-3	Accessible surfaces of the shroud support structure. No indications were noted.
	Fall 1996	VT-3	Sect. XI, under core plate. Where access was provided in RF08, camera work was performed. No indications noted.
SLC	N/A	N/A	N/A

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly	Spring 2018	EVT-1/ VT-1/ UT	EVT-1 performed on 4 adapter weld locations, 16 diffuser weld locations, 8 inlet circ. weld locations, 7 riser locations, primary riser brace welds of 3 jet pump pairs, and secondary riser brace welds of 2 jet pump pairs. No indications noted. VT-1 performed on 4 wedge/wedge rod locations. No wedge wear noted. Previously identified wedge rod wear on jet pump 09 showed no changes, and new wedge rod wear was identified on 2 jet pumps. INR GGNS IVVI-18-11. UT performed on all 24 jet pump beams. No indications noted.
	Spring 2016	EVT-1/ VT-1	VT-1 was performed on 2 jet pump wedges that had indication in previous outage. No changes were noted. EVT-1 performed on 50 locations Jet Pump Riser and Diffuser Welds with no indications.
	Spring 2014	EVT-1/ VT-1/VT3	EVT-1/VT-1 performed on 39 locations Jet Pump Riser and Diffuser Welds with no indications. VT-3 performed on eight (8) sensing lines with no indications. VT-1 was performed on all 24 jet pump wedges with 2 indications found on the Stellite Cladding of Jet Pumps #5 and #16. Indications documented under INR GGNS-IVVI-14-01 R1.
	Spring 2012	UT	UT performed on 21 of 24 Jet Pump beams. Three beams have been replaced with new beams and do not require UT at this time. No indications noted.
	Spring 2010	EVT-1	Completed baseline examinations (148 locations). Performed additional inspections of Jet Pump Wedges (12) and Riser Braces (12) due to Laguna Verde OE. No indications were noted.
	Fall 2008	EVT-1	Performed examinations on Jet Pump wedges 1 thru 12. No wear was identified; however slight wear was noted on wedge rods JP 01, JP 02, JP 05, JP 06, JP 07 and JP 09. No additional exams were performed.

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Plant: Grand Gulf Nuclear Station Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (continued)	Spring 2007	EVT-1/ UT	Wedge examination performed on 4 wedges due to disassembly of Jet Pumps in previous outages. EVT-1 was performed on the Riser Brace to vessel weld (5 locations). UT performed on 21 of 24 Jet Pump beams. Three beams have been replaced with new beams and do not require UT at this time.
	Fall 2005	EVT-1	Wedge examinations were completed on 12 jet pumps. Wedge exams have been completed on all jet pumps with no indications. Examined one IN-1 and IN-2 location with no indications noted.
	Spring 2004	EVT-1/ VT-1	Completed remaining examinations on JP 0304 and 0910. Completed baseline on 50% of low and medium priority locations and 100% of high priority (RS-3) locations. Identified and inspected an additional RS-1 weld at JP 0910 and inspected additional weld at the DF-3 location. The additional weld at the DF-3 location was identified in the Fall 2002 outage (DF-3a). No indications noted.
	Fall 2002	EVT-1	All required locations for JP 0304 and JP 0910. Examination exceptions are RB-1b, RB-1d, RB2a-d for JP0304; welds DF-1 for JP03 and JP04; DF-3 for JP03 and JP10; IN-1 and IN-2 for JP04; IN-2 for JP10. No indications noted.
	Spring 2001	EVT-1	Accessible areas of RS-1 and RS-2 welds on JP01/02. No indications noted.
	Fall 1999	EVT-1	Accessible areas of RS-3 weld at JP07/08, JP09/10 and JP11/12. No indications noted.
	Spring 1998	MVT-1/ VT-3	Accessible areas of RS-3 weld on JP 0102, JP 0304 and JP 0506. VT-3 on flow restriction on JP 09, 10, 11 and 24. No indications noted.
	Fall 1996	UT	UT performed on JP beams. Two beams cracked in RF06 and all were replaced with Unit 2 spares. No UT exams were done in RF07. RF08 changed out all beams with the new GE design.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
CRD Guide Tube	Spring 2008	EVT-1	Completed baseline exams on 10 CRD Guide Tubes. No indications were noted.
	Fall 2002	EVT-1	CRGT-2 & 3 (10 places). FS/GT-ARPIN-1 (2 places). No indications noted.
	Spring 2001	VT-3	12 guide tubes. 12 FS/GT-ARPIN-1 and CRGT-1. Accessible portions of CRGT-2 (2 places). No indications noted.
	Spring 1998	VT-3	34 CRGT-1 exams completed with no indications noted.
	Fall 1996	VT-3	8 guide tubes. When accessibility permits. No indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Dry Tubes	Spring 2018	VT-1	Performed inspections on 1 SRM and 5 LPRM dry tubes. 5 IRM and 2 SRM dry tubes were replaced with universal style dry tubes. No indications noted.
	Spring 2016	VT-1	Performed exams on 8 SRM/IRM and 5 LPRM dry tubes. One IRM and four LPRM dry tubes were replaced. No recordable indications were noted.
	Spring 2014	VT-1	Performed exams on 10 SRM/IRM dry tubes and identified two dry tubes with indications. SRM F was replaced during this outage and was one of the dry tubes with an indication. Indications documented under INR GGNS-IVVI-14-03.
	Spring 2012	VT-1	Performed inspections on 5 LPRM dry tubes. Replaced four dry tubes that had indications in Spring 2010. No indications noted.
	Spring 2010	VT-1	Performed exams on 14 SRM/IRM dry tubes. Four dry tubes had indications.
	Fall 2008	VT-1	Performed inspections on 24 LPRM dry tubes. No indications noted.
	Spring 2007	VT-1	Accessible areas of 14 SRM/IRM and 7 LPRMS. No indications noted.
	Fall 2002	VT-1	Accessible areas of 6 LPRM dry tubes. No indications noted.
	Spring 1998	VT-3	11 guide tubes. No indications noted.
Instrument Penetrations	Fall 1996	VT-3	No indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Vessel ID Brackets	Spring 2018	VT-3/ EVT-1	VT-3 inspections performed on the guide rod bracket and bracket to RPV attachment weld at 000 and 180. No indications noted. EVT-1 inspections performed on steam dryer support brackets. No new indications were noted and previous indications showed no apparent change. INR GGNS IVVI-18-07.
	Spring 2016	VT-1/ VT-3/ EVT-1	Inspections were performed on Steam Dryer Support Brackets, Steam Dryer Hold-down Brackets, Feedwater Sparger Brackets and Surveillance Specimen Holder Brackets. No discernible changes.
	Spring 2014	EVT-1/ VT-3	Inspections were performed four (4) Steam Dryer Support Bracket due to indications on the Steam Dryer Seismic Blocks. No discernible changes.
	Spring 2007	VT-1/3	Section XI Jet Pump attachment welds at 5 locations. VT-3 of accessible areas of H9. No indications noted.
	Fall 2005	VT-1/3	Section XI CS Piping Brackets, FW Sparger End Brackets, Guide Rod Brackets (upper), Steam Dryer Brackets, Surveillance Sample Brackets and attachment welds at JP1112. Due to disassembly of the JP11 mixer an examination was performed at one Shroud Support Stub weld. No indications.
	Spring 2004	VT-1	Section XI Jet Pump attachment welds at two locations was inspected. No indications.
	Fall 1996	VT-1/3	Section XI every 10 years on Attachment welds. Other parts of brackets on general VT-3 exam. No indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
LPCI Coupling	Spring 2016	EVT-1	Exams were performed on LPCI @ 39°. No indications were noted.
	Spring 2010	EVT-1	Exams were performed on LPCI @ 219°. No indications were noted.
	Fall 2008	EVT-1	EVT-1 performed on the extra welds (6-4a) that were noted during RF15 at each LPCI strut. No indications were noted.
	Spring 2007	EVT-1	VT-1 on all accessible areas of LPCI @ 141°. Extra weld was located on the strut assembly at all LPCI locations. No indications noted.
	Fall 2005	VT-1	VT-1 on LPCI @ Az. 141° due to a previous loose parts impact concern. No indications.
	Fall 2002	EVT-1	All accessible areas @ Az 39°. No indications. VT-1 on LPCI @ Az. 141° due to a previous loose parts impact concern. No indications.
	Spring 2001	VT-1	VT-1 on LPCI @ Az. 141° due to a previous loose parts impact concern. No indications.
	Fall 1999	VT-1	All accessible areas @ 219°. VT-1 on LPCI @ Az. 141° due to a previous loose parts impact concern. No indications.
	Spring 1998	EVT-1	All chosen welds on LPCI couplings @ Az 39° and 141°. No indications.
	Spring 1996	VT-1	VT-1 on LPCI @ Az. 141° due to a previous loose parts impact concern. No indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer	Spring 2018	VT-3/ EVT-1/ VT-1	VT-3 on dryer exterior, no indications noted. EVT-1 on all steam dryer support brackets, no new indications noted and previous indications showed no change (INR GGNS IVVI-18-07). VT-1-1/32 on all steam dryer seismic support blocks, new non-relevant indications noted and previous indications on blocks at 120, 185, 240, and 300 showed no changes (CNR GGNS IVVI-18-01). VT-1-1/32 on the lower guide at 000 and 180, no new indications noted at 180. The previously noted installation/removal witness marks on lower guide area 000 showed two new rub marks and portions of the previously identified indications were covered with crud buildup (INR GGNS IVVI-18-08). VT-1-1/32 of previous indication on tie rod bolt bank C at 000 showed no apparent change (INR GGNS IVVI-18-05).
	Spring 2016	VT-1	Performed inspections on all accessible welds on the interior and exterior of the dryer. Indications were identified on Seismic Support Blocks. Indications documented under INR GGNS-IVVI-16-02
	Spring 2014	VT-1	Performed inspections on all accessible welds on the interior and exterior of the dryer. Indications were identified on Seismic Blocks, Tie Rod Bolting and Lower Guide Bracket. Indications documented under INR GGNS-IVVI-14-02 R2, INR GGNS-IVVI-14-06 and INR GGNS-IVVI-14-07.
	Spring 2012	Various	Steam Dryer replaced due to Extended Power Uprate
	Spring 2010	VT-1	Examined previous indications (cracked tack welds at lifting lugs and IGSCC cracking on the upper support ring). No changes were noted.
	Fall 2008	VT-1	Examined areas identified during RF15. Additional crack was noted on a lifting lug and addition linear indication (1" lg.) was identified on the Upper Support Ring.
	Spring 2007	VT-1	Completed BWRVIP-139 examination. Cracked tack welds were noted on all (4) lifting lugs. No movement was noted. Eleven indications (IGSCC) were identified on the dryer upper support ring. No

			indications were longer than 3 ½".

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Dissimilar Metal Welds on Reactor Nozzles	Spring 2016	UT	N02M-KB Nozzle to Safe End Weld N02N-KB Nozzle to Safe End Weld N05B-KB Nozzle to Safe End Weld N05B-KC Safe End to Extension N06B-KB Weld Overlay N10-KC Safe End to Pipe Cap Weld No changes in original recordable indication for N06B-KB Weld No other recordable indications
	Spring 2012	UT	N01B-KB Nozzle to Safe End Weld N02F-KB Nozzle to Safe End Weld N02G-KB Nozzle to Safe End Weld N02H-KB Nozzle to Safe End Weld N02J-KB Nozzle to Safe End Weld N04C-KB Nozzle to Safe End Weld N04D-KB Nozzle to Safe End Weld N05A-KB Nozzle to Safe End Weld N05A-KC Safe End to Extension N06B-KB Nozzle to Safe End Weld N06B-KC Safe End to Extension N06C-KB Nozzle to Safe End Weld N06C-KC Safe End to Extension N09A-KB Nozzle to Safe End Weld Crack was discovered in N06B-KB weld and weld overlay was completed satisfactorily. Ref. CR-GGN-2012-06386.
	Spring 2010	UT	N02B-KB Nozzle to Safe End Weld N02C-KB Nozzle to Safe End Weld N02D-KB Nozzle to Safe End Weld N02E-KB Nozzle to Safe End Weld N06A-KB Nozzle to Safe End Weld N06A-KC Safe End to Extension N09B-KB Nozzle to Safe End Weld No recordable indications
	Fall 2008	UT	N5B-KB Nozzle to Safe End Weld N5B-KC Safe End to Safe End Ext. N4A-KB Nozzle to Safe End Weld N4F-KB Nozzle to Safe End Weld N4B-KB Nozzle to Safe End Weld No recordable indications

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Dissimilar Metal Welds on Reactor Nozzles (cont.)	Spring 2007	UT	N1A-KB Nozzle to Safe End Weld N2A-KB Nozzle to Safe End Weld N2K-KB Nozzle to Safe End Weld K2M-KB Nozzle to Safe End Weld K2N-KB Nozzle to Safe End Weld K9A-KB Nozzle to Safe End Weld N9A-KC Safe End to Safe End Ext No recordable indications noted
Reactor Bottom Drain Line	Spring 2012	UT	Two 2" drain lines were inspected per the Flow Accelerated Corrosion Program. Degradation documented in Calculation MC-Q1111-12004. Next scheduled inspections are RF23 and RF 29, respectively.
Lower Plenum	Spring 2016	VT-3	Lower plenum inspections performed with Cell 32-33 and 28-29 removed. No recordable indications.
Feedwater Sparger Nozzles and End Bracket	Spring 2018	VT-1	VT-1 performed on all feedwater sparger flow holes and feedwater sparger bracket end pins. No indications noted on flow holes. New indications identified on bracket end pins at 062, 185, 233, and 305. INR GGNS IVVI-18-10 R1.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
SHSAMs	Spring 2018	VT-3	SHSAM locations 01, 03, 05, 19, 21, 27, 28, 30, 32, and 36 were modified and an as-left VT-3 inspection performed. No new indications noted.
	Spring 2016	VT-3	All SHSAM locations were inspected. Additional/new wear was reported on SHSAMs 1, 3, 5, 27, 28, and 36. SHSAM 32 retainer pins were not visible and the retainer was found raised ~1" and rotated. SHSAM 36 had lower pin to lower can deformation noted. No indications were identified on SHSAMs with the modification installed. The number of SHSAMs required for operation remains sufficient.
	Spring 2014	VT-3	SHSAMs without the installed modification were inspected. Additional wear was noted on SHSAMs 19, 27, 28, 30, 32, and 36. The number of SHSAMs required for operation remains sufficient.
	Spring 2012	VT-3	SHSAMs without the installed modification were inspected. Additional/new wear was identified on SHSAMs 19, 28, and 32. The number of SHSAMs required for operation remains sufficient.
	Spring 2010	VT-3	SHSAMs without the installed modification were inspected. No additional/new wear was identified.
	Fall 2008	VT-3	All SHSAM locations were inspected. No indications were observed on SHSAMs with the modification installed. Additional indications were identified on non-modified SHSAMs 3, 14, 19, 27, 28, 30, 32, and 36. The number of SHSAMs required for operation remains sufficient.
	Spring 2007	VT-3	All locations were inspected with no new indications.
	Fall 2005	VT-3	All SHSAM locations were inspected. Wear was identified on SHSAM 32, and additional indications were noted on SHSAM 28 and 14. The number of SHSAMs required for operation remains sufficient.
	Spring 2004	VT-3	A modification was installed on SHSAM locations 7, 9, 10, 12, 16, 18, 23, 25, and 34.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
SHSAMs (continued)	2002	N/A	During de-tensioning of the shroud head studs in preparation for removal of the shroud head, SHSAM 12 was discovered with the canister protruding ~1" above the other housing. GE SIL 650 was issued to address the issue.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Shroud Horizontal Welds	Fall 1994 (1R15)	N/A	4-Tie Rods repair installed Fall 1994/1R15. No examination of horizontal welds H-1 through H-8 required.
	Spring 2006 (1R22)	UT	Examined H-1 through H-7 to prove structural integrity due to cracked shroud tie rod upper supports and 1 loose shroud tie rod. Significant cracking identified, but acceptable for one cycle. Future inspections unlikely pending future shroud repair corrective actions anticipated for 1R23.
	Spring 2008 (1R23)	UT	Examined H-5, H6a, H6b, and H-7 to prove structural integrity due to the inability to replace cracked shroud tie rod upper support at 225. Significant cracking identified, but acceptable for another cycle. Little growth in flaws from 2006 inspection.
	Spring 2016 (1R27)	EVT-1	Examined H4 from the OD and the ID from 65° to 115°. Several transverse indications identified originating from H4 upper and lower weld toes, some extending beyond HAZ. Longest flaw 1.65". One at cell 50-35 (106°) verified through wall. Two flaws presumed through wall, for evaluation. All newly discovered flaws determined structurally acceptable and bounded by 1R26 structural and leakage evaluation.

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Core Shroud Horizontal Welds (continued)	Spring 2018 (1R28)	EVT-1	Examined H4 from the OD and the ID from 235° to 245°. The 235° - 245° locations have several off-axis flaws that are extending above and below H4 from the ID ranging from < 0.5" to 1.09" in length at the 230°, 242°, 245°, and 247°. Two indications were noted on the OD at 228° and 232°, extending above H4, with a maximum length of 1.27". No flaws aligned on the OD and ID, and therefore none of the indications were through wall flaws. From the ID locations of the 335° - 345°, several off-axis flaws were noted above and below H4 ranging from 0.42" and 1.77" in length. No indications were observed from the OD. All newly discovered flaws determined structurally acceptable and bounded by latest structural and leakage evaluation.
Core Shroud Tie Rods (BWRVIP-07, 1996)	Fall 1994 (1R15)	Tightness, EVT-1 & VT-3	Installed 4-Tie Rods. Satisfactory.
	Spring 1996 (1R16)	Tightness, EVT-1 & VT-3	Increased torque to all 4 Tie Rods. 1 at 315° found to be less than desirable load and was corrected. All others acceptable.
	Fall 1997 (1R17)	Tightness, EVT-1 & VT-3	Tightness checks to all 4 Tie Rods. 1 at 315° was again found to be less than desirable load and was corrected. All others acceptable.
	Spring 1999 (1R18)	Tightness, EVT-1 & VT-3	Tightness check of 315° was found to be less than desirable, but acceptable. Tie Rod Nut Retainer slots bending from torque but acceptable, tightness procedure to be revised.

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Core Shroud Tie Rods (BWRVIP-07, 1996) (continued)	Spring 2006 (1R22)	Tightness, EVT-1 & VT-3	Tightness checks to all 4 Tie Rods. 1 at 315° was again found to be less than desirable load and was corrected. 2 cracked upper supports at 135° & 225°, one at 135° was replaced. Additional repairs and/or modifications to be performed next outage.
	Spring 2008 (1R23)	Tightness, EVT-1 & VT-3	Replaced two tie rod upper supports at 135° and 315°. Unsuccessful in detensioning the Tie Rod nuts at 45° and 225°. 45° and 225° tie rod assemblies were restored to a condition acceptable for another cycle. Tie rod at 225° contains a flaw which grew at a rate less than predicted for the previous fuel cycle.
	Spring 2010 (1R24)	Tightness, EVT-1 & VT-3	Successfully replaced the remaining two tie rod assemblies 45° and 225°. Tightness checks performed at all 4 tie rods.
	Spring 2012 (1R25)	VT-3	1-cycle post-installation re-inspection of all 4 tie rod assemblies, including post-torque verifications and upper spring torsion arms/bolts. No reportable indications.
		EVT-1 & VT-1	1-cycle post installation re-inspection of all 4 tie rod upper support corners. No reportable indications.
	Spring 2016 (1R27)	VT-3	Conducted VT-3 exams of Tie Rod/Core Plate Wedges Assemblies at 45°, 135°, 225°, and 315° with satisfactory results. No recordable indications.
	Spring 2018 (1R28)	VT-3	No relevant indications – Performed examinations of all four (4) Torsion Arms & Torsion Arm Bolts (45°, 135°, 225°, 315°).

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Core Shroud Vertical Welds (BWRVIP-07, 1996), (BWRVIP-63, 2000), & (BWRVIP-76)	Fall 1994 (1R15)	EVT-1	EVT-1, 6" ID & OD at Horizontal Weld Intersection of H-4 & H-5. V-3, V-4, V 5, & V-6. Acceptable indications found on ID of V-4, and OD of V-5.
	Spring 1996 (1R16)	EVT-1	Baseline per BWRVIP-07 in 1996. EVT-1 Outside Surface of V-1 thru V-11, & Inside Surface of V-5 & V-6. Acceptable Indications in V-5, V-6.
	Fall 1997 (1R17)	UT	UT of 6 verticals in 1997, indications in V-5 & V-6, acceptable.
	Spring 1999 (1R18)	EVT-1	EVT-1, V-1 & V-2 from OD due to access. And V-3 through V-8 from ID & OD. Indications reported on V-4, V-5, V-6, & V-8. Acceptable. Future scheduling to be determined.
	Spring 2002 (1R20)	EVT-1	EVT-1, V-1, V-2 , V-9, V-10, & V-11 from OD. No Reportables. Schedule not to exceed 6 years.
	Spring 2004 (1R21)	EVT-1 & UT	UT, V-5 & V-6 previous indications. No significant changes. Schedule not to exceed 10 years. EVT-1 of V-9, V-12, V-13, & V-14 from OD. No Reportables. Schedule not to exceed 6 years.
	Spring 2008 (1R23)	EVT-1	Examined V1, V2, V3, V4, V7, V8 V9, V10, and V11. Short indications recorded on the ID at the intersections of H4 with V4 and at the intersections of H5 with V7 and V8.
	Spring 2010 (1R24)	EVT-1	Examined 12" on either side of high fluence intersections from the ID, including V7/H5, V8/H5, V4/H4, V5/H5, V5/H4 V6/H4, and V6/H5 intersections. One new indication reported at V5/H5,

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Core Shroud Vertical Welds (BWRVIP-07, 1996), (BWRVIP-63, 2000), & (BWRVIP-76) (continued)			one less indication at V4/H4 compared to 2008 outage results. Also examined V12, V13, and V14 from the shroud OD with no indications reported.
	Spring 2014 (1R26)	UT	Examined V3, V4, V5, V6, V7, V8, V9, and V10, via UT. Indications noted at V4, V5, V6, V7 and V8. Re-examination of V6 revealed a portion of the longest V6 crack was through-wall. Another small indication near V5 above H4 not associated with a weld was sized via UT. All evaluated structurally and for leakage and found acceptable.
			Examined intersections of H4/V4, H5/V8, and H5/V7 via traditional or specialized UT to characterize previously reported off-axis indications. Four indications axial to H4 near the V4 intersection were found to be through wall. All evaluated structurally and for leakage and found acceptable.
		EVT-1	Intersections at H4/V4 and H5/V8 were also inspected via EVT-1 from the ID. Additional small indications noted at both intersections evaluated as acceptable. Additional coverage CCW of V4 at H4 revealed an additional axial indication (one of the 4 H4/V4 through-wall indications identified via UT). Examined V1, V2, and V11 via EVT-1 from the OD with no recordable indications. All evaluated as acceptable.

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Core Shroud Vertical Welds (BWRVIP-07, 1996), (BWRVIP-63, 2000), & (BWRVIP-76) (continued)	Spring 2016 (1R27)	EVT-1	Conducted supplemental EVT-1 exam of V5 and V6 from the OD. Pre-existing IGSCC flaws at V5 and V6 showed no growth based on review of 1R26 UT. One 1.4" transverse flaw identified extending from V6 weld toe. All flaws determined structurally acceptable. Examined V12, V13, V14 from the OD with no recordable indications, re-examine in 6 years. See Shroud Horizontal Weld scope above for additional H4 inspection results.
	Spring 2018/1R28	EVT-1	No relevant Indications – Performed re-examinations from the OD surface of welds V-12, V-13, and V-14 in accordance with Deviation 2017-01. Achieved 75% coverage for V12 and 85% coverage for V13, V14.
Core Shroud Ring Segment Welds (BWRVIP-07, 1996), (BWRVIP-63, 2000), & (BWRVIP-76)	Spring 1996 (1R16)	EVT-1	EVT-1 from outside surface of 2 Ring welds. Satisfactory.
	Fall 1997 (1R17)	EVT-1	EVT-1 from outside surface of 4 Ring welds. 1- acceptable indication.
	Spring 1999 (1R18)	EVT-1	EVT-1 from outside surface of 5 Ring welds. No indications. Previous indication determined to be non-relevant. Future scheduling to be determined.
	Spring 2002	EVT-1	EVT-1 from OD of Top Guide RSW at 60°. No Reportables. 1 of 4 Top Guide RSW every 2 cycles, or 4 years.
	Spring 2004	EVT-1	EVT-1 from OD of Top Guide RSW at 60°, re-exam. No Reportables. 1 of 4 Top Guide RSW every 2 cycles, or 4 years.
	Spring 2006	EVT-1	EVT-1 from OD of Top Guide RSW at 120°. No Reportables. 1 of 4 Top Guide RSW every 2 cycles, or 4 years.

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Core Shroud Ring Segment Welds (BWRVIP-07, 1996), (BWRVIP-63, 2000), & (BWRVIP-76) (continued)	Spring 2010 (1R24)	EVT-1	EVT-1 from OD to Top Guide RSW at 240°. No reportables. 1 of 4 Top Guide RSW every 2 cycles, or 4 years.
	Spring 2014 (1R26)	EVT-1	EVT-1 from OD of Top Guide RSW (R-12) at 300°. No reportable indications. 1 of 4 Top Guide RSW every 2 cycles, or 4 years.
	Spring 2018 (1R28)	EVT-1	Top Guide Support Ring Segment Weld at 60° R-8 from outside surface. No Indications.
Core Shroud Support Ledge (H-9) (BWRVIP-38, 2000)	Fall 1994 (1R15)	VT-3	0-360° where accessible, from top once/interval. Examined 100%. No indications. Future BWRVIP-38 scheduling to be determined. Very limited for EVT-1.
		EVT-1 & VT-1	Examined support plate gusset welds @45, 135, 225, 315.
	Fall 1997 (1R17)	EVT-1	VT-1 per NRC SE on shroud repair. EVT-1 performed of gusset plates & attachment welds at tie rod azimuths (45, 135, 225, 315). No indications.
	Spring 2004 (1R21)	EVT-1	4 Shroud Support Plate Gusset Welds at 12°, 105°, 195°, & 285°. No Reportables. Future scheduling to be determined.
	Spring 2006 (1R22)	EVT-1	EVT-1 of >15% of H-8 in order to establish redundancy to the degraded shroud repair (2 cracked upper supports at 135° & 225°). No reportables.
		VT-3	ASME VT-3 of all shroud support plate gussets and attachment welds.
		UT	UT of approximately 20% of H-9 per BWRVIP-104. No reportables.
	Spring 2010 (1R24)	EVT-1	EVT-1 of Shroud Support Plate Gusset Welds at 30°, 45°, 90°, 135°, 210°, 225°, 300°, 315°, 345° per BWRVIP-38 requirements.

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Core Shroud Support Ledge (H-9) (BWRVIP-38, 2000) (continued)		VT-3	VT-3 of 30°, 90°, 210°, 300°, 345° for ASME requirements.
	Spring 2016 (1R27)	EVT-1	EVT-1 of Shroud Support Plate Gusset Welds at 60, 120°, 150°,, 240°, 330° per BWRVIP-38 requirements, and Tie Rod Anchorages/Gussets at 45°, 135°, 225°, and 315°.
		VT-3	VT-3 of Shroud Support Plate Gusset Welds at 15°, 45°, 60°, 75°, 105°, 120°, 135°, 150°, 165°, 195°, 225°, 240°, 255°, 270°, 285°, 315°, 330° for ASME requirements.
		UT	UT examination of approximately 15% of H-9 was conducted. No reportable indications.
Core Shroud Support Ledge Access Hole Covers (at 0° & 180°) (BWRVIP-180, 2007)	Fall 1992	UT	UT Indications. Acceptable for one cycle.
	Spring 1993 (1R14)	VT-1 & VT-3	Replaced with mechanical design in 1993. Typical for 2 at 0° & 180°. Examine one every outage / or 2 each period, VT-1 bolting tack welds/VT-3 remaining. No reportable indications.
	Fall 1994 (1R15)	VT-1 & VT-3	Examine each period. Examined 0°. No reportable indications.
	Spring 1996 (1R16)	VT-1 & VT-3	Examine each period. Examined 180°. No reportable indications.
	Fall 1997 (1R17)	VT-1 & VT-3	Examine each period. Examined 0°. No reportable indications.
	Spring 1999 (1R18)	VT-1 & VT-3	Examine each period. Examined 180°. No reportable indications.
	Fall 2000 (1R19)	VT-1 & VT-3	Examine each period. Examined 0° where evidence of leakage on the shroud side was observed. Examined 180° and found similar evidence of leakage. Determined that leakage is expected.

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Core Shroud Support Ledge Access Hole Covers (at 0° & 180°) (BWRVIP-180, 2007) (continued)	Spring 2002 (1R20)	VT-1 & VT-3	Examine each period. Examined 180° evidence of expected leakage.
	Spring 2004 (1R21)	VT-1 & VT-3	Examine each period. Examined 180°. No reportable indications. Leakage not reported.
	Spring 2006 (1R22)	VT-1 & VT-3	Examine each period. Examined 0° and 180° Evidence of expected leakage.
	Spring 2014 (1R26)	VT-1 & VT-3	Examine once per 8 years per BWRVIP-180. Examined AHCs at 0° and 180°. Evidence of expected leakage. No changes noted.
Core Spray Internal Piping (BWRVIP-18, 1997)	1980's to Spring 1996 (1R16)	VT-1 (.001)	IEB 80-13/NUREG CR-4523. Examine each outage.
	Fall 1997 (1R17)	EVT-1	BWRVIP-18 implemented 1997. No indications.
	Spring 1999 (1R18)	EVT-1	No indications.
	Fall 2000 (1R19)	EVT-1	No indications.
	Spring 2002 (1R20)	EVT-1	No indications.
	Spring 2004 (1R21)	EVT-1	No indications.
	Spring 2006 (1R22)	EVT-1	No indications.
	Spring 2008 (1R23)	EVT-1	No indications.
	Spring 2010 (1R24)	EVT-1	No indications.
	Spring 2012 (1R25)	EVT-1	No indications.
	Spring 2014 (1R26)	EVT-1	No indications.
	Spring 2016 (1R27)	EVT-1	No indications.
	Spring 2018 (1R28)	EVT-1	No Relevant Indications – Transitioned to BWRVIP-18 Rev. 2-A Inspection Requirements. Performed inspections of the P4a, P4b, P4c, and P4d welds at 350°. Discovered Core Spray Pipe Draw Beads near P4b
Core Spray Sparger (BWRVIP-18, 1997)	1980's to Spring 1996 (1R16)	VT-1 (.001)	IEB 80-13/NUREG CR-4523. Examine each outage. Mechanical Repair Clamp on T-Box Cover Plate in 1984.
	Fall 1997 (1R17)	CSVT-1	BWRVIP-18 implemented 1997. No reportable indications.

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Core Spray Sparger (BWRVIP-18, 1997) (continued)	Spring 1999 (1R18)	EVT-1 & VT-3	Began Sparger inspections as Geometry Critical. No reportable indications.
	Fall 2000 (1R19)	EVT-1 & VT-3	No reportable indications.
	Spring 2002 (1R20)	EVT-1 & VT-3	No reportable indications.
	Spring 2004 (1R21)	EVT-1 & VT-3	No reportable indications. (Insp not in GL03?)
	Spring 2006 (1R22)	EVT-1 & VT-3	No reportable indications.
	Spring 2008 (1R23)	EVT-1	No reportable indications. (Insp not in GL03?)
	Spring 2010 (1R24)	EVT-1, VT-1 (89), & VT-3	No reportable indications.
	Spring 2012 (1R25)	EVT-1 & VT-1 (89)	No reportable indications.
	Spring 2014 (1R26)	EVT-1 & VT-1 (89)	No reportable indications.
	Spring 2018 (1R28)	VT-1 (89)	No Relevant Indications – Transitioned to BWRVIP-18 Rev. 2-A Inspection Requirements. Inspected Core Spray Sparger Repair Clamp (Bolting and Tack Welds) at 350°
		VT-3	No Relevant Indications – All (A-D) Sparger Nozzles (S3a/b) and Sparger D Drain Connections (S3c)
Top Guide (BWRVIP-26, 1997)	Fall 1994 (1R15)	VT-1	VT-1 (.001) of Beams at 10 Cell Locations. & 4 - hold down bolts. EVT-1.
	Spring 1996 (1R16)	VT-1	4 Aligner Pins & Brackets, 4 Hold-down Brackets. No Indications.
	Fall 1997 (1R17)	VT-1	BWRVIP-26, 2 adjacent aligner pins. No indications. Accessible Rim Weld, VT-1. (EVT-1 required, no credit taken due to the in-ability to brush). No indications.
	Spring 1999 (1R18)	VT-1	2 adjacent aligner pins. No indications. Hold-downs no

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Top Guide (BWRVIP-26, 1997) (continued)			longer required due to GE evaluation.
	Fall 2000 (1R19)	VT-3	7 – grid areas (VT-3 ASME) during (CRB) Control Rod Blade replacement.
	Spring 2002 (1R20)	VT-1	VT-1, 2 of 4 Top Guide Hold-downs, 180° apart, every other outage beginning 1R20.
	Spring 2004 (1R21)	VT-3	35 cell locations during CRB shuffle/exchange. No Reportables. Examinations scheduled when CRB's are shuffled/exchanged.
	Spring 2006 (1R22)	VT-1	VT-1, 2 of 4 Top Guide Hold-downs, 180° apart every other outage. No indications. Also performed VT-1 of 2 cells from the underside. No indications.
	Spring 2008 (1R23)	EVT-1	Grid beams in 14 cells per BWRVIP-183. No indications.
	Spring 2010 (1R24)	EVT-1 & VT-1	EVT-1 of grid beams in 21 cells per BWRVIP-183. No indications. VT-1 on 2 of 4 top guide hold-downs, 180° apart, every other outage. No indications.
	Spring 2014 (1R26)	VT-1	VT-1, 2 of 4 Top Guide Hold-downs, 180° apart every other outage. Minor wear noted on 176° assembly at pin area. Evaluated as acceptable.
	Spring 2016 (1R27)	VT-1	VT-1, Reinspection of Top Guide Hold-down at 176°. No noted changes in wear, acceptable.
	Spring 2018 (1R28)	VT-1	Relevant Indication – Performed examinations of the Top Guide Hold Down Bracket and Attachment Welds to the Shroud at 86°, 176°, and 266°. A previously undocumented indication (from the Spring 2010 Refueling Outage (1R24)) was noted on the 086° top guide hold down assembly. The indication will be reinspected

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Top Guide (BWRVIP-26, 1997) (continued)			during 1R29 to reassess the growth rate. Relevant Indication – Performed examinations of the Top Guide Beam Connection. Two (2) indications were found on the top guide beam connection at cell 46-11. Based on these findings, expanded scope to all accessible top guide beam connection locations. Cumulative inspections resulted in newly discovered indications on the top guide bottom support ring at 30°, 40°, 50°, 130°, 140°, 220°, 310°, and 320° locations, and on the bottom collars at 50°, 130°, 220°, 230°, and 310° locations. All indications evaluated as acceptable for one cycle of operation." 1R29 top collars are to be inspected to ensure evaluation assumptions remain bounded.
Core Plate (BWRVIP-25)	Fall 1990 (1R12)	VT-1 & VT-3	VT-1 of Alignment Assembly (4). VT-1 Accessible Bolts from top surface. No reportable indications.
	Fall 1994 (1R15)	VT-1	VT-1 of Alignment Assembly (4). VT-1 Accessible Bolts from top surface. No reportable indications.
	None	N/R	BWRVIP-25 examinations not required per Hatch configuration since installation of wedges during shroud repair in 1994. No future scheduling.
	Fall 2000 (1R19)	VT-3	7 – top surface areas during (CRB) Control Rod Blade replacement. Also, 8 – Core Plate By-Pass Flow Hole Plug. No reportable indications.

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Core Plate (BWRVIP-25) (continued)	Spring 2002 (1R20)	VT-3	14 – core plate top surface areas during Guide Tube Inspections. Also, 14 – Core Plate by-pass Flow Hole Plugs. No reportable indications.
	Spring 2004 (1R21)	VT-3	35 cell locations during CRB shuffle/exchange. Also 32 Core Plate By-pass Flow Hole Plugs. No Reportables. Examinations scheduled when CRB's are shuffled/exchanged.
	Spring 2006 (1R22)	VT-3	2 cell locations during CRB exchange. Also 4 Core Plate By-pass Flow Hole Plugs. No Reportables. Examinations scheduled when CRB's are exchanged.
	Spring 2008 (1R23)	VT-3	Examined 3 Core Plate Bypass Plugs
	Spring 2010 (1R24)	VT-3	Examined 21 Core Plate Bypass Plugs. No indications reported.
	Spring 2014 (1R26)	VT-3	Examined 34 Core Plate Bypass Plugs. No indications or leak by reported.
	Spring 2016 (1R27)	VT-3	Examined 17 Core Plate Bypass Plugs. No indications reported.
	Spring 2018 (1R28)	VT-3	Examined 17 Core Plate Bypass Plugs. No indications reported.
Standby Liquid Control (BWRVIP-27)	Fall 2000 (1R19)	Direct VT-2 or UT	Performed direct VT-2 during leakage test. No indications.
	Fall 2004 (1R21)	Direct VT-2 or UT	Performed direct VT-2 during leakage test. Access not suitable for UT. No indications.
	Spring 2006 (1R22)	Direct VT-2 or UT	Performed direct VT-2 during leakage test. Access not suitable for UT. No indications.
	Spring 2008 (1R23)	Direct VT-2 or UT	Performed direct VT-2 during leakage test. Access not suitable for UT. No indications.
	Spring 2010 (1R24)	UT	Performed UT using newly developed tooling allowing access. No indications.
Jet Pump Assembly (BWRVIP-41, 1999)	Through 1996 (1R16)	VT-1 & VT-3	ASME Riser Brace Arm Attachments. No Indications. Augmented SIL's/RICSIL's for Restrainer Adjusting Screw

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Jet Pump Assembly (BWRVIP-41, 1999) (continued)			Tack Welds & Gap's. Riser Brace Arm to Riser Welds. Hold-Down Beams, Inlet mixers, Sensing Lines. Hold down beams replaced in 1990 due to UT indications.
	Fall 1997 (1R17)	EVT-1, VT-1, & VT-3	All Thermal Sleeve to Risers welds, and some transition piece, diffuser, adapter examined 1997. Two indications that where reported in 1997 on the thermal sleeve to elbow welds HAZ's. Acceptable.
	Spring 1999 (1R18)	EVT-1, VT-1, & VT-3	BWRVIP-41, intended to perform visual examination of all high priority welds, but could not perform EVT-1 examination of lower diffuser welds due to mainly gusset interference's. May perform UT on those welds next outage. UT examination of all Jet Pump Beam Bolts, no indications. Examined adjusting screw tack welds & gaps, 1 broken tack weld, and 4 set-screw gaps, worst one was .019" (no corrective action required). Additionally examined the restrainer wedge assemblies with the associated set-screw gaps (no reportable indications). Two indications that where reported in 1997 on the thermal sleeve to elbow welds had no significant change (took better measurements).
	Fall 2000 (1R19)	EVT-1 & VT-1	BWRVIP-41, made another attempt to perform EVT-1 examination of lower diffuser welds due to mainly gusset interference's. Re-examined adjusting screw tack welds & gaps, 1 broken tack weld, and 4 set-screw gaps reported during

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Jet Pump Assembly (BWRVIP-41, 1999) (continued)			1R18. No significant changes. One gap went away.
			Indications on the two thermal sleeve to elbow welds (EVT-1) that where first reported in 1997 and re-examined in 1999 had no significant changes.
			Nine of ten Riser brace arm to pad, and pad to vessel welds (EVT-1). No reportable indications.
	Spring 2002	EVT-1 & VT-1	50% of the population of the medium priority items. Augmented 50% of the sensing line support brackets. No Reportables.
	Spring 2004 (1R21)	UT	UT was performed on 100% (20) AD-1, AD-2, & DF-2 welds due to inaccessibility for suitable visual inspection due to support plate gussets. No reportables.
		EVT-1	Indications on the two thermal sleeve to elbow welds (EVT-1) that were first reported in 1997 and re-examined in 1999 and 2000 had no significant changes.
		UT	UT was performed on 20 Jet Pump Hold-down Beams - No indications.
	Spring 2006 (1R22)	EVT-1	EVT-1 was performed on 50% of the RS-1, RS-2, RS-3 welds. Indications on the two thermal sleeve to elbow welds (RS-1's) that were first reported in 1997 and re-examined in 1999, 2000 and 2004 had no significant changes since 1997.
		VT-1	Re-baseline all 20 restrainer wedge bearing surfaces (WD-1) - No indications.
		EVT-1 & VT-1	Re-examined all wedges. Completed baseline of medium priority locations. Re-

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Jet Pump Assembly (BWRVIP-41, 1999) (continued)			examined 50% of RB-1 locations. No reportable indications
	Spring 2008 (1R23)	EVT-1	Re-examined RS-1 indications on JP 3/4 and 7/8 with no change in length.
		VT-1	Examined sensing lines on JPs 7 and 17. No indications.
		UT	UT was performed on 50% (10 Jet Pumps) of AD-1, AD-2, & DF-2 in accordance with BWRVIP-41 Rev. 2. No reportables.
	Spring 2010 (1R24)	EVT-1	Re-examined RS-1 indications on JP 3/4 and 7/8 with no change in length. Examined RS-8 and RS-9 welds for Jet Pumps 1-10. No reportable indications.
		EVT-1 & VT-1	Examined RB-1, riser braced to vessel welds, for Jet Pumps 5/6 and Jet Pumps 9 through 18. No reportable indications.
	Spring 2012 (1R25)	EVT-1	Examined RS-1, RS-2, RS-3 riser welds for JP 11-20, Re-examined RS-1 indications on JP 3/4 and 7/8 with no change in length.
		VT-1	Examined all 20 JP restrainer bracket wedges. Examined sensing lines on JP 7 and 17. No indications.
	Spring 2014 (1R26)	EVT-1	Re-examined RS-1 indications on JP 3/4 and 7/8 with no change in length. Re-examined 25% (5 Jet Pumps) of MX-2, IN-4, RS-6 and RS-7, and DF-1 welds according to BWRVIP-41 Rev 3, with no indications noted. Also examined Riser brace to yoke (RB-2) welds for 4 jet pumps with no indications noted.

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Jet Pump Assembly (BWRVIP-41, 1999) (continued)	Spring 2016 (1R27)	EVT-1	Re-examined RS-1 indications on JP 3/4 and 7/8 with no change in length. Examined RS-8 and RS-9 welds for Jet Pumps 11-16. Expanded scope to RS-8/9 on JP riser 5/6 due to large set screw gap and wedge rod wear at JP 5 and 6 respectively. No reportable indications.
		VT-1	Re-examined WD-1 for Jet Pumps 1-20, Slight wedge rod wear (less than 1%) found at WD-1 for Jet Pump 6 and was evaluated as acceptable for plant operation. Expanded scope to WD-2 and AS-2a/b for Jet Pump 5 & 6 due to large set screw gap and wedge rod wear at JP 5 and 6 respectively. No other reportable indications. Examined 100% AS-1 locations. Restrainer bracket set screw gaps identified at 9 jet pumps. The largest gaps noted at Jet Pumps 5 & 15 (23 and 18 mils respectively) were eliminated via wedge tapping. The as-left condition of all gaps were evaluated and determined acceptable for continued plant operation.
		UT	In accordance with BWRVIP-41, UT was performed on 50% (10 Jet Pumps) of AD-1, AD-2, & DF-2 and 100% (20 Jet Pumps) of BB-1, BB-2, & BB-3. No reportable indications.
	Spring 2018 (1R28)	EVT-1	Performed re-inspections of 40% of the RB-1 welds (4/10 locations). Performed re-inspections (EVT-1) on 50% of the RS-1, RS-2, and RS-3 Welds. No changes to previous

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Jet Pump Assembly (BWRVIP-41, 1999) (continued)			indications at JP-3/4 and JP-7/8 RS-1 welds. Performed AS-1a (Vessel Side), AS-1b (Shroud Side) for JP-5, 10, and 15. Restrainer bracket set screw gaps identified at 3 jet pumps. The largest gaps noted at Jet Pumps 5 & 10 (14 mils at both locations). The as-left condition of all gaps were evaluated and determined acceptable for continued plant operation.
		VT-1	No Relevant Indications – Performed re-inspections of five (5) Jet Pump WD-1 locations (25%) and two (2) Jet Pump Sensing Line Brackets.
CRD Guide Tubes (BWRVIP-47)	Fall 2000 (1R19)	EVT-1 & VT-3	Tentative plans for inspections during 1R20 /Spring 2002. A FSC/GT Anti-Rotation Pin at 18-03 was reported as being loose in 1996. Was examined from the top side during 1R19, Fall 2000. Is welded from bottom.
	Spring 2002 (1R20)	EVT-1 & VT-3	EVT-1, 10% of the population (14) Guide Tubes CRGT-1, CRGT-2, & CRGT-3 welds, and VT-3 of FSC/GT Anti-Rotation Pins. Also examined applicable fuel support castings.
	Spring 2018 (1R28)	VT-3	No Indications - Inspected six (6) Fuel Support / Guide Tube Anti-Rotation Pins
CRD Stub Tubes	None Required	VT-2	None Scheduled (VT-2 during Class 1 Reactor Pressure Vessel Leakage Test)
In-Core Housing	None Required		None Scheduled
Dry Tubes	1987 (1R10)	N/A	Replaced with non-creviced design.
	Spring 2006 (1R22)	N/A	Replaced 6 (50%) dry tubes
	Spring 2008 (1R23)	N/A	Replaced remaining 6 (50%) dry tubes
Instrument Penetrations (BWRVIP-49)	Spring 1993 (1R14)	VT-2	Pin hole leak in 1993 was repaired.
	Fall 1994 (1R15)	PT & VT-2	No reportable indications.

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	Fall 1997 (1R17)	I, PT, UT, & VT-2	N10, N16A/B nozzles direct visual 1997. N10, N11A/B, N12A/B UT & PT in 1997. Examined during leakage test. No reportable indications.
	Spring 1999 (1R18)	VT-2	Future PT/UT may be exempt due to size/safety function/ and make-up capacity.
	Every Outage	VT-2	Future PT/UT exempt due to size/safety function/ and make-up capacity per Engineering. VT-2 every outage during class 1 leakage test.
*RPV Interior Attachments (BWRVIP-48) *Other Attachments examined by other BWRVIP documents.	Spring 1996 (1R16)	VT-1 & VT-3	Surveillance Specimen Brackets (3) No reportable indications.
	Fall 1997 (1R17)	VT-1 & VT-3	Guide Rod Brackets (2). No reportable indications.
	Spring 1999 (1R18)	VT-1 & VT-3	Steam Dryer Support Brackets (4). No reportable indications.
	Fall 1997 (1R17)	VT-1	Steam Dryer Support Hold Down Brackets (4). No reportable indications.
	Spring 1993 (1R14) Fall 1997 (1R17)	VT-1 & VT-3	FW Sparger Brackets (4) every fourth outage per NUREG-0619 commitments. No reportable indications. Future scheduling to be determined.
	Fall 1994 (1R15)	EVT-1, VT-1, & VT-3	VT-3, 2 - Guide Rod Brackets. VT-1, 1 - Upper Surveillance Specimen Bracket. VT-3, 1 - Lower Surveillance Specimen Bracket. EVT-1, 4 - Steam Dryer Support Brackets. EVT-1, 4 - Feedwater Brackets. No reportable indications.
	Spring 1999 (1R18)	VT-1	VT-1, 4 Steam Dryer Hold-down Brackets. No reportable indications. Each Interval.
	Spring 2002 (1R20)	EVT-1	EVT-1, 4 Feedwater Brackets to RPV. No reportable indications.
	Spring 2004 (1R21)	VT-3	1 Upper guide rod bracket to RPV, 3 upper surveillance specimen brackets to RPV.

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*RPV Interior Attachments (BWRVIP-48) *Other Attachments examined by other BWRVIP documents. (continued)	Spring 2006 (1R22)	EVT-1	3 lower surveillance specimen brackets to RPV.
	Spring 2008 (1R23)	EVT-1 & VT-3	4 FW Sparger Bracket Welds to RPV
	Spring 2010 (1R24)	EVT-1 & VT-3	1 Core Spray Bracket to RPV weld at 330°.
	Spring 2012 (1R25)	VT-3	1 Upper guide rod bracket to RPV at 180°, and 2 Guide Rod & Lower guide rod attachment welds to Shroud at 0° and 180°. No reportable indications.
		EVT-1 & VT-3	Steam Dryer Support Bracket & Attachment welds (4). No indications reported. Core Spray Piping Bracket at 210° also inspected. No indications.
	Spring 2014 (1R26)	VT-3	Steam Dryer Hold Down Brackets (4). No reportable indications.
		EVT-1 & VT-3	Core Spray Bracket & Attachment welds at 30°. No reportable indications.
	Spring 2016 (1R27)	EVT-1 & VT-3	Examined 1 Core Spray Bracket & Attachment weld at 150°, and 4 FW Sparger Bracket Welds to RPV. No reportable indications.
	Spring 2018 (1R28)	VT-3	No Relevant Indications - Guide Rod and Lower Guide Rod Bracket Attachment Weld to RPV at 0°. Upper and Lower surveillance specimen bracket attachment welds to the RPV (30°, 120°, & 300°). Interim inspection guidance within BWRVIP letter 2018-045 was completed for 120° upper, lower surveillance specimen brackets, basket, rod, etc. This is the only location with a capsule remaining in vessel.
		EVT-1	No Relevant Indications - Core Spray Piping Bracket and Attachment Welds to RPV at 330° location.

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LPCI Coupling (BWRVIP-42)	N/A	N/A	N/A - Not Applicable to Edwin I. Hatch Nuclear Plant
Feedwater Spargers (NUREG-0619)	Fall 1994 (1R15) Spring 1996 (1R16) Fall 1997 (1R17) Spring 1999 (1R18)	VT-1 & VT-3	1994 through 1999 inspections: Sparger Arms, Flow Holes, Brackets, Tees, Welds, Nozzle Blend Area. No reportable indications. Schedule 2 of 4 every outage per NUREG-0619 commitments. Future scheduling to be determined.
	Spring 2004 (1R20) Spring 2006 (1R22)	VT-1 & VT-3	Sparger Arms, Flow Holes, Brackets, Tees, Welds. Unusual wear on end brackets to pins. Probable repair next outage. Schedule 2 of 4 every other outage beginning 1R20.
	Spring 2008 (1R23)	VT-3	FW Sparger end pins repair completed at four locations (185°, 265°, 275°, & 355°). Repaired due to wear.
Feedwater Spargers (NUREG-0619) (continued)	Spring 2010 (1R24)	VT-3	FW Sparger end pins/brackets at 5°, 85°, 95°, 175° inspected. Minor wear discovered on locations at 95° and 175°. Scope expanded to examine repaired locations at 185°, 265°, 275°, 355°. No further wear noted from additional exams. Re-examine locations at 5°, 85°, 95°, and 175° next outage with contingency planning in place.
			Sparger Arms, Flow Holes, Brackets, Tees, Welds, Nozzle Blend Area. No reportable indications
	Spring 2012 (1R25)	VT-1 & VT-3	FW Sparger end pins/brackets at 5°, 85°, 95°, 175° re-inspected. No further wear noted from reinspection. Re-examine or repair next outage.
		EVT-1 & VT-3	Previously repaired FW sparger end pin brackets at 265°, 185°, 355°, 275° also inspected with no indications noted.

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Feedwater Spargers (NUREG-0619) (continued)	Spring 2014 (1R26)	VT-3	Sparger Arms, Flow Holes, Brackets, Tees, Welds. One flow nozzle discovered slightly out of round. Evaluated as acceptable. No other reportable indications
		EVT-1 & VT-3	Modified FW Sparger end pins/brackets at 185°, 265°, 275°, 355° re-inspected. No reportable indications.
		EVT-1 & VT-3	FW Sparger end pins/brackets at 5°, 85°, 95°, 175° re-inspected. No further wear on noted from reinspection. Re-examine or repair next outage.
	Spring 2016 (1R27)	VT-3	Sparger Arms, Flow Holes, Brackets, Tees, Welds. Flow nozzle at 315° re-inspected. No reportable changes.
		VT-1 & VT-3	FW Sparger end pins/brackets at 5°, 85°, 95°, 175° re-inspected. No further wear noted from reinspection.
		EVT-1 & VT-3	End bracket attachment welds at 185°, 265°, 275°, 355° re-inspected. No reportable changes.
	Spring 2018 (1R28)	VT-3	Sparger Arms, Flow Holes, Brackets, Tees, Welds. Flow nozzle at 45° & 135° re-inspected. No reportable changes.
		VT-1 & VT-3	FW Sparger End Pins/Brackets at 85°, 95°, 175° re-inspected. The inspections resulted in: (1) minor new wear being identified on the 085° pin, (2) no discernible change in previously identified (during the Spring 2010 Refueling Outage (1R24)) wear on the 095° pin, and (3) a slight change in previously identified (during 1R24) wear on 175° pin. All indications evaluated

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			for continued operation with re-inspection per NUREG 0619.
Steam Dryer	Spring 2006 (1R22)	VT-1 & VT-3	Upper support ring @ 0°-360° top and vertical surfaces VT-3. Lower & Upper Guide at 1800 (10) Tie Bars TB1 – TB10, Vertical welds - Various Hood (8) Drain Channels DC1 – DC8 (5) Lower horizontal welds (2) Upper horizontal welds. One tie bar was cracked on one side on the middle span and was repaired (re-welded). Minor indications on DC-1 & Upper Support Ring. BWRVIP examinations are performed every other cycle until the BWRVIP determines an examination frequency. Other owner designated examinations are performed every 6 years.
	Spring 2008 (1R23)	VT-1 (89)	Upper support ring top and vertical surfaces 0-360°. Monitoring previously identified small indications. Flaws exhibited little discernable change. Lower support ring and guide 24" on either side of lower guide at 0°. Drain channel #1. Monitoring previously identified small indications. Flaws exhibited little discernable change. Tie Bar #6. Reinspection weld repaired tie bar during 2006
	Spring 2010 (1R24)	VT-1 (89)	Upper support ring top and vertical surfaces 0-360°. Previously identified indications were determined to be non-relevant during 1R24. Flaws exhibited little discernable change.

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Steam Dryer (continued)	Spring 2012 (1R25)	VT-1 (89)	Examined steam dryer tie bars 3-7, various horizontal welds (4), vertical partition welds (4), Vertical hood welds (9), and drain channels (4). No indications reported.
	Spring 2014 (1R26)	VT-1 (89)	Lower support ring 24" on either side of lower guide at 0°. Upper guide and lower guide at 0°. Seismic Brackets (4). Lifting Eye, Rod and Attachment welds at 215° and 325°. No indications reported. Vertical partition weld (1) – no change to historical/legacy indications.
	Spring 2016 (1R27)	VT-1 (89)	Inspected Upper Support Ring top and vertical surfaces 0°-360°, Lower support ring 24" on either side of lower guide at 180°, Vertical Partition Welds (3), Various Horizontal Welds (3), Vertical Hood Welds (10), with no indications reported. Upper and Lower Guides at 0° and 180° inspected. No change to pre-existing gouges and areas of raised metal at 180° Lower Guide . Acceptable for continued operation. Drain Channel welds 1-7 inspected. No change to pre-existing indications at Drain Channel #1. No other indications reported. 7 Tie Bars inspected. Tie Bar #6 repairs showed no change. Tie Bars 7 & 8 show crack-like indications. Evaluated as acceptable for 1-cycle of operation. Repairs to be planned next outage.

Reactor Internals Inspection History

Plant: Hatch Nuclear Plant Unit 1

Steam Dryer (continued)	Spring 2018 (1R28)	VT-1 (89)	Tie Bars 3, 4, 5, 6, 7, and 8 were inspected. There were no new indications noted on Tie Bars 3-8 or changes to existing indications on Tie Bars 7 and 8. 2 newly identified indications at vertical partition weld on the end plate base material of the Steam Dryer (beginning in the heat affected zone (HAZ) of the Steam Dryer Vertical Partition Plate (VP) 3/2-4 Weld) were evaluated as acceptable. Repaired Items - Upper and Lower Guides at 0° and Tie Bars 7 and 8

Reactor Internals Inspection History

Plant: Hatch Nuclear Plant Unit 1

Steam Dryer (continued)			
DM Welds	Spring 2008 (1R23)	UT	Performed manual UT of N9 nozzle cap weld and the "N8A" jet pump instrument nozzle-to-safe end weld. Both examinations met Appendix VIII criteria. The N8A nozzle-to-safe end weld examination detected no indications. Manual UT plots in the N9 cap weld indicated a potential flaw that appeared to extend upward from the root area along the interface of the replacement weld and the original nickel alloy butter fusion line. Phased array UT (Appendix VIII qualified) was then used to fully interrogate the weld and characterize the indication. The indication was evaluated to be a circumferentially oriented defect that was 2.3 inches long on the inside diameter and 60% through wall in a pipe thickness of 0.74 inches. A SWOL was successfully applied. Scope was expanded to the "N8B" jet pump instrument nozzle-to-safe end weld with no indications detected. All DM weld inspections for 2008 were Category C welds according to BWRVIP-75-A criteria.
	Spring 2010 (1R24)	UT	Performed manual UT of Recirc nozzle N2D, N2F, N2G, N2H, and N2K nozzle-to-safe end welds. All examinations met Appendix VIII criteria. The N2D and N2H examinations

Reactor Internals Inspection History

Plant: Hatch Nuclear Plant Unit 1

DM Welds (continued)			required some weld conditioning prior to UT. The examinations resulted in no reportable indications.
	Spring 2016 (1R27)	UT	Performed auto UT of Recirc nozzle N2C, N2E, N2J, and N5A nozzle-to-safe end welds as well as on 22 "B" Manifold and Drywell 156. Pre-existing repaired indication at N2E discovered to have grown through the overlay to the outside surface. Notifications to NRR and BWRVIP made. Previously applied "design" overlays at a Recirc-to-RHR valve DM weld, N2C and N2E partially removed to apply full structural overlay. Seal weld repair applied for N2E. Post overlay UT completed with satisfactory results for all three locations. No reportable indications.
	Spring 2018 (1R28)	UT	No Reportable Indications - Performed combination manual and automated UT on N3A, N4A, N4B, N4C, N4D, N8B, and N9 nozzle to shell welds with no reportable indications. Three BWRVIP-75A Category C DM welds (pipe to safe-end extension, safe-end extension to safe-end, and safe-end to nozzle) examined with automated UT. No Reportable Indications - Examined three (3) Category E Overlaid welds (two (2) pipe to valve and one (1) pipe to pipe)

Reactor Internals Inspection History

Plant: Hope Creek

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	Winter 1996 RF06	VT-1 1 mil	Examined H-4, H-5 at 4 cell locations. No indications found IAW SIL 572 R1
	Fall 1997 RF07	UT	Examined 100% accessible regions of H-3, 4, 5, 7. No indications found
	Fall 2007 RF14	UT	Examined 100% accessible regions of H-3, 4, 5, 7. Achieved 60.1 to 62.8% coverage. Found 5 indications in H4, all less than 2 inches length, less than 15% thru wall, 2.1% of examined length. Found 1 indication in upper side H5, 4.3 inches in length, depth 11%, 1.1% of examined length. Use as is for 10 years IAW VIP-76.
	Fall 2016 RF20	UT	Examined 100% accessible regions of H-3, 4, 5, 7. Found 5 indications in H4, all less than 3 inches length, less than 17% thru wall, 1.93% of examined length. Found 1 indication in upper side H5, 5.96 inches in length, depth 15%, 1.39% of examined length. Examined portions of H4 and H7 for off-axis indications in accordance with VIP interim guidance. 2 minor indications identified on H4, both less than 2 inches in length, depth less than 15% thru wall. Re-inspection scheduled for 10 years in accordance with BWRVIP-76 and VIP interim guidance.
Shroud Support	Spring 1994 RF06	VT-3	Examined 6 shroud support pillars IAW Sec. XI. No indications found
	Fall 1997 RF07	VT3	Examined accessible portions of H-8 and H-9. No indications
Shroud Support (continued)		EVT-1	Examined access hole covers. No

Reactor Internals Inspection History

Plant: Hope Creek

Shroud Support (continued)			indications.
	Spring 2003 RF11	UT	UT of H-8, 11%, and H-9, 16%, from vessel OD. No indications
		EVT-1	Examined access hole covers. No indications.
	Spring 2006 RF13	EVT-1	Examined access hole covers. No indications.
	Spring 2009 RF15	EVT-1	Examined access hole covers. No indications.
	Fall 2010 RF16	VT-3	Examined annulus surface. No issues or FME found.
	Spring 2012 RF17	EVT-1	Examined H-8 (18.6%) and H-9 (21%) top side only. Found 7 transverse flaws on H-9. Evaluated use as is for 6 years. Examined RPV OD at the flaw locations. No flaws penetrated into RPV low alloy steel.
	Fall 2013 RF18	EVT-1	Examined annulus surface, FOSAR, recovered 5 Powerfect nuts.
		EVT-1	Examined 3 flaws found in RF17 for growth. No growth. Examined Top Hat access hole cover. Examined 76.4% circumferentially of vertical weld, 38.5% has signs of indications.
	Spring 2015 RF19	EVT-1	Examined flat access hole cover. No indications.
		EVT-1	Examined top hat access hole cover. Examined 77.78% circumferentially of vertical weld, 24.2% has signs of indications.
		VT-3	Examined annulus surface. No issues or FME found.
	Fall 2016 RF20	VT-3	Examined annulus surface. No issues found. Identified FME removed from the vessel.

Reactor Internals Inspection History

Plant: Hope Creek

Shroud Support (continued)	Spring 2018 RF21	EVT-1	Examined H-9 (21%) top only. Seven previously identified indications on H-9 showed no growth. One new indication in H-9 identified, with similar characteristics to previous seven indications. Evaluation justified operation for six years. No flaws penetrated into RPV low alloy steel.
		EVT-1	Examined H-8 weld. No indications found.
		VT-3	Examined annulus surface. No issues or FME found.
Core Spray Piping	Winter 1996 RF06	VT-1	Piping and welds in annulus examined IAW IEB 80-13. One indication found on a bracket bolt tack weld.
	Fall 1997 RF07	EVT-1	Examined all creviced and non-creviced weld locations, no indications
		VT-1	Examined all (8) header brackets, no new indications.
	Spring 1999 RF08	EVT-1	Examined all creviced and 25% non-creviced locations, no indications.
		VT-1 & 3	Examined 25% header brackets, no new indications.
	Spring 2000 RF09	EVT-1	Examined all creviced weld locations, no indications.
		VT-1 & 3	Examined 25% header brackets, no indications.
	Fall 2001 RF10	EVT-1	Examined all creviced and 25% non-creviced locations, no indications.
		VT-1 & 3	Examined 25% header brackets, no indications.
	Spring 2003 RF11	EVT-1	Examined all creviced weld locations, no indications.
		EVT-1 & VT-3	Examined 25% header brackets, no indications.
	Fall 2004 RF12	EVT-1	Examined all creviced and 25% non-creviced locations, no indications.

Reactor Internals Inspection History

Plant: Hope Creek

Core Spray Piping (Continued)		EVT-1 & VT-3	Examined 25% header brackets, no new indications.
	Spring 2006 RF13	EVT-1	Examined all creviced weld locations, no indications
		EVT-1 & VT-3	Examined 25% header brackets, no indications.
	Fall 2007 RF14	UT & EVT-1	Examined all creviced and 100% non-creviced locations, no indications.
		EVT-1 & VT-3	Examined 25% header brackets, no new indications.
	Spring 2009 RF15	EVT-1	Examined all locations that could not be UT examined in the previous outage, no indications.
		EVT-1 & VT-3	Examined 25% header brackets. No indications.
	Fall 2010 RF16	EVT-1	Examined all creviced weld locations, no indications
		EVT-1 & VT-3	Examined 25% header brackets, no indications.
	Spring 2012 RF17	EVT-1	Examined all creviced weld locations, no indications
		EVT-1 & VT-3	Examined 25% header brackets, no indications.
	Fall 2013 RF18	EVT-1	Examined all creviced weld locations, no indications
		EVT-1 & VT-3	Examined 25% header brackets, no indications.
	Spring 2015 RF19	EVT-1	Examined all creviced weld locations, no indications
		EVT-1 & VT-3	Examined 25% header brackets, no indications.
	Fall 2016 RF20	EVT-1	Examined 'B' loop piping elbows (P4a-d), no indications.
		EVT-1 & VT-3	Examined 25% header brackets, no indications.

Reactor Internals Inspection History

Plant: Hope Creek

Core Spray Piping (Continued)	Spring 2018 RF21	EVT-1	Examined 'D' loop piping elbows (P4a-d), no indications.
		EVT-1 & VT-3	Examined 25% header brackets, no indications.
Core Spray Sparger	Winter 1996 RF06	VT-1	Piping and spargers in shroud examined IAW IEB 80-13. No indications.
	Spring 1999 RF08	EVT-1 VT-1	All sparger welds, no indications. 50% nozzle welds and all bracket welds, no indications.
	Fall 2001 RF10	EVT-1 VT-1	All sparger welds, no indications. 50% nozzle welds and all bracket welds, no indications.
	Fall 2004 RF12	EVT-1 VT-1	All sparger welds, no indications. 50% nozzle welds and all bracket welds, no indications.
	Fall 2007 RF14	EVT-1 VT-1	All sparger welds, no indications. 50% nozzle welds and all bracket welds, no indications.
	Fall 2010 RF16	EVT-1 VT-1	All sparger welds, no indications. 50% nozzle welds and all bracket welds, no indications.
	Fall 2013 RF18	EVT-1 VT-1	All sparger welds, no indications. 50% nozzle welds and all bracket welds, no indications.
Top Guide (Rim, etc.)	Fall 1992/ Spring 1994/ Winter 1996	VT-1	Examined IAW SIL 554. Examined 4 cell locations made available during normal refuel. No indications.
	Winter 1996 RF06	VT-3	Examined Top Guide wedges IAW SIL 588 R1. No indications.
	Fall 1997 RF07	VT-1	Examined IAW SIL 554. Examined 4 cell locations made available during normal refuel. No indications.
	Spring 1999 RF08	VT-3	Examined 4 C-clamps, no indications.

Reactor Internals Inspection History

Plant: Hope Creek

Top Guide (Rim, etc.) (Continued)	Spring 2009 RF15	EVT-1	Examined 4 top guide grid beam locations. No indications.
		VT-3	Examined 4 C-clamps, no indications
	Fall 2010 RF16	EVT-1	Examined 4 top guide grid beam locations. No indications.
	Spring 2012 RF17	EVT-1	Examined 2 top guide grid beam locations. No indications
	Fall 2016 RF20	EVT-1	Examined 3 top guide grid beam locations. No indications. SRM plunger tip was not fully seated but was reseated into the receptacle.
	Spring 2018 RF21	EVT-1	Examined 3 top guide grid beam locations. No indications. SRM plunger tip was not fully seated but remained captured by top guide intersection notch. Evaluation performed for all inspected dry tubes justified operation for one cycle, with re-inspection of one dry tube in RF22
		VT-3	Examined 4 C-clamps, no indications.
Core Plate (Rim, etc.)	Fall 1997 RF07	VT-3	Examined all hold down bolts, no indications.
	Spring 1999 RF08	VT-3	Examined 26 hold down bolts, no indications.
Jet Pump Assembly	Spring 1994 RF05	VT-1	50% riser braces, RB-1/2 & RS-8/9, no indications
		VT-3	100% wedges and setscrews IAW SIL 574. 3 screws with 1 tack cracked
	Winter 1996 RF06	VT-1	50% riser braces, RB-1/2 & RS-8/9, no indications
		VT-3	100% wedges and setscrews. 4 screws with 1 tack cracked, 2 screws with 2 tacks cracked
	Fall 1997 RF07	VT-1	50% riser braces (RB-1/2 & RS-8/9), 100% RS-1, no indications
		VT-1	100% sensing lines. Three pumps have

Reactor Internals Inspection History

Plant: Hope Creek

Jet Pump Assembly (Continued)			cracked standoffs, installed clamps.
		VT-3	100% beams, no indications
		VT-3	100% wedges and setscrews. 1 screw with 1 tack cracked
	Spring 1999 RF08	EVT-1	50% riser brace(RB-1/2 & RS-8/9), no indications
		EVT-1	100% RS-1, no indications
		VT-1	100% sensing lines, no indications
		VT-3	100% beams, 100% wedges and setscrews, no indications
	Spring 2000 RF09	EVT-1	50% riser brace (RB-1/2 & RS-8/9), no indications
		VT-1	100% sensing lines, no indications
		VT-3	100% wedges and setscrews, no indications
	Fall 2001 RF10	VT-1	100% sensing lines, no indications
		VT-3	100% wedges
	Spring 2003 RF11	VT-1	100% wedges, no movement noted
		EVT-1	100% RS-3, 50% RS-2, 50% RS6/7 50% IN-4, 50% MX-2, 50% DF-1/2, 50% AD1/2, 50%, no indications
		VT-1	50% sensing lines, no indications
	Fall 2004 RF12	UT	100% beams, BB1/2, no indications
		VT-1	50% sensing lines, no indications
		EVT-1	25% RS-1, 50% RS-2, 50% IN-4, 50% MX-2, 50% DF-1/2, 50% AD1/2, 50% RS-6/7, no indications
	Spring 2006 RF13	VT-1	50% sensing lines, no indications
		VT-1	100% wedges, one had minor wedge wear, installed slip joint clamp
		EVT-1	25% RB-1/2, 25% RS-8/9, no indications
	Fall 2007 RF14	VT-1	100% wedges, one had minor wedge wear and SS setscrew gap of 35 mil, installed auxiliary wedge
		VT-1	1 slip joint clamp, no issues
		VT-1	7 setscrew tack welds previously identified with cracks. One setscrew found with all tacks cracked. Staked

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Plant: Hope Creek

Jet Pump Assembly (Continued)			setscrew, use as is one cycle without auxiliary wedge.
		UT	100% beams, BB1/2, no indications
	Spring 2009 RF15	VT-1	100% wedges, no wear found.
		VT-3	Slip joint clamp and aux wedge. No issues found.
		VT-1	11 sensing lines. No indications.
		VT-3	Installed aux wedge for an issue found previous outage.
		EVT-1	50% RS3, no indications.
	Fall 2010 RF16	EVT-1	100% RS-8/9 and 25% RS-6/7. No indications
		VT-1	50% wedges. No new wear found.
		VT-3	3 sensing line clamps and 1 aux wedge. No issue found.
	Spring 2012 RF17	EVT-1	25% inlet/mixer and diffuser welds (IN4, MX2, DF1/2, AD1/2). No issues found.
		EVT-1& VT-1	3 riser brace welds. No issues found.
		VT-1	50% wedges. No new wear found.
		EVT-1	3 RS-1 and RS-2. No issues found.
	Fall 2013 RF18	UT	100% beams, no indications
		VT-1	3 sensing line lower bracket, no indications
		VT-1	6 known setscrews tack cracks. 3 confirmed no growth, 3 no indication.
	Spring 2015 RF19	VT-1	50% wedges and rods. No new wear found.
		VT-1	14 sensing line support brackets. No indications.
		VT-3	3 sensing line clamps. No indications.
		VT-3	1 Slip joint clamp. No indications.
		VT-3	2 Aux wedges. No indications.
		EVT-1	50% RS-3 Riser to Transition. No indications.

Reactor Internals Inspection History

Plant: Hope Creek

Jet Pump Assembly (Continued)		EVT-1 & VT-1	2 Riser Braces, RB-1 & RB-2. No indications.
	Fall 2016 RF20	EVT-1	Examined 3 restrainer bracket to riser pipe welds, RS-6 and RS-7, and 3 riser brace to riser pipe welds, RS-8 and RS-9, no indications.
	Spring 2018 RF21	EVT-1/ VT-1	Examined 3 Riser Braces, RB-1 & RB-2 welds, no indications
		VT-1	Examined 1 Riser Brace, RB-1, no indications
		EVT-1	Examined 3 Riser Elbow to Thermal Sleeve welds, RS-1, and 3 Riser Elbow to Riser Pipe welds, RS-2, no indications
		EVT-1	Examined 1 Restrainer Bracket to Riser Pipe Weld (RS-6), no indications; examined as part of wedge wear expanded scope.
		EVT-1	Examined 2 Yoke to Riser Pipe Welds (RS-8 & RS-9), no indications; examined as part of wedge wear expanded scope.
		VT-1	Examined 50% wedges and wedge rods, Identified crack-like indications in Stellite hardfacing on four wedges, with previous indications unchanged, evaluation justified continued operation with indications; Previously identified wedge wear on 2 jet pumps show no change; Identified minor wedge wear on one jet pump, with SS setscrew gap of 0.007", no wedge rod wear identified, inboard tack weld crack unchanged from previous inspections; evaluation justified operation for four cycles, with interim re-inspection in one cycle

Reactor Internals Inspection History

Plant: Hope Creek

			(RF22) Identified minor wedge rod wear (<10%) on one jet pump, evaluation justified operation for four cycles, with interim re-inspection in one cycle (RF22)
CRD Guide Tube	Winter 1996 RF06	VT-3	Examined 6 guide tubes IAW Sec. XI. No indications
	Spring 1999 RF08	VT-3/1	Examined 4 guide tubes, no indications
	Spring 2003 RF11	VT-3/1	Examined 6 guide tubes no indications
	Fall 2004 RF12	VT-3/1	Examined 10 guide tubes, no indications
	Fall 2007 RF14	VT-1	Examined 5 guide tubes, no indications
	Fall 2013 RF18	EVT-1 VT-3	Below Core Plate Inspection Examined 100% of CRGT-2 & CRGT-3 on CRGT 30-31. Examined Surrounding CRGT's
CRD Stub Tube	Spring 94 RF05	VT-3	Examined IAW Sec XI. Examined CRD Housing through removed jet pump diffuser. No indications.
In-Core Housing	Not examined		
Dry Tube	Fall 1992 RF04	VT-1	Examined IAW SIL 409. No indications found.
	Spring 1999 RF08	EVT-1	All 12 dry tubes had circumferential cracking approx 1 inch below the upper collar
	Spring 2000 RF09		Replaced all 12 dry tubes
	Spring 2018 RF21	VT-1	Examined upper 2 feet of 6 incore dry tubes (4 IRMs, 2 SRMs), four (4) found with slightly disengaged plungers, which remained captured by the top

Reactor Internals Inspection History

Plant: Hope Creek

			guide intersection notch; evaluation justified operation for one cycle, with re-inspection of one dry tube in RF22
Instrument Penetrations	Fall 1997 RF07	VT-1 and VT-3	Examine IAW Sec. XI, no indications
Vessel ID Brackets	Winter 1996 RF06	VT-1	50% jet pump riser bracket, no indications
	Fall 1997 RF07	VT-1	100% core spray header bracket, 50% jet pump riser bracket, 100% surveillance sample bracket, no indications.
		VT-3	100% guide rod bracket, 100% feedwater bracket, 100% steam dryer holddown bracket, no indications
	Spring 1999 RF08	VT-1	25% core spray header bracket, 100% feedwater sparger bracket, 100% steam dryer support bracket, no indications.
		EVT-1	50% jet pump riser bracket, no indications
		VT-3	100% guide rod bracket, no indications
	Spring 2000 RF09	VT-1	25% core spray header bracket, no indications
		EVT-1	50% jet pump riser bracket, no indications
	Fall 2001 RF10	VT-1	25% core spray header bracket, no indications
		VT-3	100% guide rods, no indications
	Spring 2003 RF11	EVT-1	25% core spray header bracket, no indications
	Fall 2004 RF12	EVT-1	25% core spray header bracket, 100% steam dryer support bracket, 100% feedwater sparger bracket, no indications found.
		VT-3	100% guide rod bracket, no indications found.
	Spring 2006 RF13	EVT-1	25% core spray header bracket, 25% jet pump riser bracket, no indications

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Plant: Hope Creek

Vessel ID Brackets (Continued)		VT-1	100% surveillance sample bracket, no indications
		VT-3	100% steam dryer holddown bracket, no indications
	Fall 2007 RF14	EVT-1	25% core spray header brackets
	Spring 2009 RF15	EVT-1 EVT-1 & VT-1	25% core spray header brackets. 100% feedwater brackets. Found minor pin wear on 2 pins. Evaluation justified operation for one cycle.
	Fall 2010 RF16	EVT-1 VT-1	25% core spray header brackets. 2 Feedwater bracket pins where wear previously found. No discernable change.
	Spring 2012 RF17	EVT-1 VT-1	25% core spray header brackets and 3 jet pump riser braces. No issues found. 2 Feedwater bracket pins where wear previously found. Minor additional wear found.
	Fall 2013 RF18	EVT-1 VT-1 VT-3	25% core spray header brackets and 4 jet pump riser braces. No issues found. Examined 120deg surveillance capsule assembly.
	Spring 2015 RF19	EVT-1 & VT-1	2 jet pump riser brace arm. No indications.
		EVT-1 & VT-3	25% core spray header brackets.
		EVT-1 & VT-3	100% steam dryer support bracket to RPV. No indications.
		VT-3	2 guide rod flange & brackets. No indications.
		VT-3	100% feedwater sparger vessel attachments. No indications.
		VT-3	2 Feedwater bracket pins where wear previously found. No additional wear.

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Plant: Hope Creek

Vessel ID Brackets (Continued)	Fall 2016 RF20	EVT-1 & VT-3	Examined 25% Core Spray header brackets, no indications.
		VT-1	Examined 100% of surveillance sample brackets, no indications
	Spring 2018 RF21	EVT-1 & VT-3	Examined 25% Core Spray header brackets, no indications.
		VT-1 & VT-3	Examined 100% of Feedwater sparger brackets, no indications.
		VT-3	Examined 12 Feedwater bracket pins, including 2 with previously identified wear. No discernable change identified on 2 pins, slight wear identified on 3rd pin. Evaluation justified operation for six cycles based on wear rates observed.
LPCI Coupling	Fall 2001 RF10	EVT-1 VT-1 VT-3	Examined 50% couplings, no indications
	Spring 2003 RF11	EVT-1 VT-1 VT-3	Examined 50% couplings, no indications
	Spring 2006 RF13	EVT-1 VT-1 VT-3	Examined 50% couplings, no indications
	Spring 2012 RF17	EVT-1 VT-1 VT-3	Examined 50% couplings, no indications
	Spring 2015 RF19	EVT-1 VT-1 VT-3	Examined 50% couplings. Two indications on the shroud attachment ring, ~.88" & 1".
		EVT-1	Expanded scope to include same location on balance of couplings. No indications.
	Fall 2016 RF20	EVT-1	Examined two previously identified indications on shroud attachment ring. No change in indications from RF19.

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Plant: Hope Creek

LPCI Coupling (Continued)	Spring 2018 RF21	EVT-1	Examined two previously identified indications on shroud attachment ring. Indications identified to be tooling marks and changed to non-relevant.
Steam Dryer	Fall 1997 RF07	VT-1	100% support ring, one indication identified on face, 2.25"
	Spring 1999 RF08	VT-1 VT-1	100% drain channels, no indications Re-look at previous support ring indication, no growth
	Spring 2000 RF09	VT-1	100% support ring, no new indications, no growth on previous indication
	Fall 2001 RF10	VT-1 VT-1	100% drain channels, one indication identified on skirt below a seismic lug access plate weld, 0.75" 100% support ring, no new indications, no growth on previous indication
	Spring 2003 RF11	VT-1 EVT-1 EVT-1 VT-1 VT-3 VT-1	100% support ring, no new indications, no growth on previous indication Re-look at skirt indication, no growth Manway coverplate 100% coverplates 100% tie bars 100% lifting lug braces, one found severed.
	Fall 2004 RF12	VT-1 VT-1	100% support ring, no growth on previous indication, new indication identified; 0.625" across top, and 0.75" down face. Outlet plenum plate welds-between banks B&C and D&E, outer hood welds at hood stiffener, outer hood welds at top, 100% drain channels, inner hood welds at hood stiffener, no indications.
	Spring 2006 RF13	VT-1 VT-1	Previously identified indications on support ring, no growth found. 100% hood assembly welds (exterior surfaces only), 100% tie bars, 100% lifting assembly welds, 100% cover plate welds. 4 locations had IGSCC

Reactor Internals Inspection History

Plant: Hope Creek

Steam Dryer (Continued)			type indications. Two indications were above a construction (original) repair patch on hood C with a combined length of 4". Another was on the outlet plenum plate between banks A&B near bottom, 1.25". Adjacent to the cover plate on the support ring a 5" indication was identified. On a lifting rod two indications were found on the threads near a tack weld. No repairs were made.
	Fall 2007 RF14	VT-1	5 locations with previously found indications. No crack growth found.
	Spring 2009 RF15	VT-1	Re-baseline IAW BWRVIP-139 and all previous indications inspected following EPU implementation. One new IGSCC flaw found on the support ring. Previous flaws on a lifting lug tack weld were found joined. One creator crack found on a lifting rod bracket weld. All indications were evaluated for use as is. No repairs required.
	Fall 2010 RF16	VT-1	2nd re-baseline IAW BWRVIP-139 following EPU implementation. One new ISGCC flaw found on lifting rod threads near the tack weld. Indication was evaluated for use-as-is. No repair was made.
	Spring 2012 RF17	VT-1	Re-examined IGSCC flaw and redundant tack weld on a lifting rod. No discernable change on previous flaw. New indication on redundant weld and evaluated for use-as-is. No repair was made.
	Fall 2013 RF18	VT-1	Examined 6 known flaws for growth. No growth observed.
	Spring 2015 RF19	EVT-1 & VT-3	100% Support bracket to RPV. No indications.

Reactor Internals Inspection History

Plant: Hope Creek

Steam Dryer (Continued)		VT-1	Examined known flaw for growth. No growth observed.
	Fall 2016 RF20	VT-1	Examined known flaws for growth. No growth observed.
	Spring 2018 RF21	VT-1	Examined areas with identified low margin (hood stiffener welds, inner hood welds, hood to backing bar welds, drain channel to skirt) to support power uprate, no indications
RPV DM welds	Fall 2007 RF14	UT	Examined N2A, category C, automated UT. Found an 89.8% thru wall circumferential flaw and performed a weld-overlay repair. Expanded scope to examine N9, category C, manual UT and N2D, category C, automated UT. No indications found. Weld crowns ground flush for all three examinations. All three nozzles contain Alloy 82/182 weld material.
	Spring 2009 RF15	UT	Examined 8 category C welds with automated UT after weld crown reduction. Found embedded flaws on 3 welds, not ID surface connected. Evaluated IAW ASME section XI. No repair required.
	Fall 2010 RF16	UT	Examined 5 category C welds after weld crown reduction; 2 by auto, 3 by manual. No indications found.
	Spring 2012 RF17	UT	Examined 1 category E weld by manual UT.
	Fall 2013 RF18	UT	Examined 3 category C welds with automated UT. No growth of known embedded flaws, no new indications.
	Fall 2016 RF20	UT	Examined 3 category C welds with automated UT. No growth of known embedded flaws, no new indications.

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Steam Separator	Fall 2013 RF18	UT	Examined all installed shroud head bolts (32 bolts). No indications.
		UT	Examined 13 spares in fuel pool. No indications. (3 additional bolts in fuel pool were not inspected)
	Spring 2015 RF19	VT-3	Examined eight shroud head bolts, including pin area. No indications.
	Spring 2018 RF21	VT-3	Examined seven shroud head bolts, including pin area. No indications.
		VT-3	Examined shroud head/assembly welds. No indications.
		VT-1	Examined six upper and six lower gussets, found two linear indications on lower gussets, evaluation justified operation for six cycles.
Below Core Plate			Removed guide tube, 30-31.
	Fall 2013 RF18	EVT-1	Examined 100% of CRGT-2 & CRGT-3 on CRGT 30-31.
		VT-3	Examined the In-Core Housing penetration tubes, welds and all accessible In-core housing support hardware. CRD Housing to Stub Tube weld and Instrumentation to RPV pen. at locations 30-31, 26-27, 30-27, 34-27, 34-31, 34-35, 30-35, 26-35, 26-31. Stub tubes (STRPV) and welds. Control Rod Drive Housing (CRDH-2, -3 & CRDH-ST), FME Exam. 1 Powerfect nut found next to location 26-31. Examined the underside of the Core Plate.
Capsule	Spring 1994 RF5		Removed 30 degree capsule
	Spring 2015 RF19		Removed 120 degree capsule per EPRI ISP program.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping	L1R17 (2018)	EVT-1	Visual examination of five core spray piping welds. NRI
		VT-1	Visual examination of one core spray piping bracket, no change in previously identified indication
	L1R16 (2016)	EVT-1	Visual examination of 34 core spray piping welds. No indications.
		EVT-1 / VT-1	Visual examination of 5 core spray piping brackets and attachment welds. No attachment weld indications. Slight wear identified at interface between one bracket and the piping.
		UT	Re-sized existing flaw BP4a; no significant change in length. Re-exam scheduled in 2 cycles.
	L1R15 (2014)	EVT-1	Visual examination of 33 core spray piping welds (implemented the sampling of P4 welds). No indications.
	L2R14 (2012)	EVT-1	Visual examination of 46 core spray welds, including two LaSalle 1-unique welds, and the BP4a welds that was examined by UT. No indications.
		UT	Re-sized existing flaw BP4a; no significant change in length. Re-exam scheduled in 2 cycles.
	L1R13 (2010)	EVT-1	Visual examination of those core spray piping welds for which UT technique is not demonstrated. No indications. Visual examination of four piping brackets. No indications.
	L1R12 (2008)	UT	Ultrasonic examination of 38 welds for which the UT technique is now demonstrated. Re-sized flaws on BP4a, DP5, and DP6 and due to new Demonstration, the flaws on DP5 and DP6 have been re-characterized as geometry-related; no flaws exist. Flaw evaluation performed on BP4a and weld scheduled for examination again in L1R14.
		EVT-1	Visual examination of those core spray piping welds for which UT technique is not demonstrated or where access is limited. No indications. Visual examination of five piping brackets. No indications.

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Core Spray Piping (Continued)	L1R11 (2006)	UT	Re-sized flaws on BP4a, DP5, and DP6. Flaw evaluation performed and welds scheduled for examination in L1R12.
		EVT-1	Visual examination of those core spray piping welds for which UT technique is not demonstrated. No indications.
	L1R10 (2004)	UT	Ultrasonic examination of 34 welds for which the UT technique is demonstrated. Re-sized flaws on BP4a, DP5, and DP6. Flaw evaluation performed and welds scheduled for examination in L1R11.
		EVT-1	Visual examination of those core spray piping welds for which UT technique is not demonstrated. No indications.
	L1R09 (2002)	EVT-1	Visual examination of those core spray piping welds for which UT technique is not demonstrated. No indications.
	L1R08 (1999)	UT	Ultrasonic examination of the welds for which the UT technique is demonstrated. Re-sized flaws on BP4a, DP5, and DP6. Flaw evaluation performed and welds scheduled for examination in L1R10.
		EVT-1	Visual examination of those core spray piping welds for which UT technique is not demonstrated. No indications. Visual examination of 50% of the core spray sparger welds. No indications.
Core Spray Sparger	L1R17 (2018)	VT-1	Visual examination of sparger bracket at 225°, no change in previously identified indication.
	L1R16 (2016)	VT-1	Visual examination of 50% of the core spray sparger S3 welds. No indications. Visual examination of seven sparger brackets. New indication noted on sparger bracket at 225°.
	L1R15 (2014)	EVT-1/VT-1	Visual examination of 25% of the core spray sparger welds. No indications. Visual examination of six sparger brackets. New indications noted on sparger bracket at 225°.
	L1R14 (2012)	VT-1	Visual examination of 25% of the core spray sparger welds. No indications. Visual examination of six sparger brackets.

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Core Spray Sparger (Continued)			No new indications
	L1R13 (2010)	EVT-1/VT-1	Visual examination of 50% of the core spray sparger welds. No indications. Visual examination of eight sparger brackets. No indications.
	L1R12 (2008)	EVT-1	Visual examination of 25% of the core spray sparger welds. No indications. Visual examination of four sparger brackets. No indications.
	L1R11 (2006)	EVT-1	Visual examination of 50% of the core spray sparger welds. No indications.
	L1R10 (2004)	EVT-1	Visual examination of 50% of the core spray sparger welds. No indications.
	L1R09 (2002)	EVT-1	Visual examination of 50% of the core spray sparger welds. No indications.
	L1R08 (1999)	EVT-1	Visual examination of 50% of the core spray sparger welds. No indications.
Attachment Welds (see Core Spray and Jet Pump sections for applicable attachment welds)	L1R17 (2018)	EVT-1 / VT-3	Visual examination of three steam dryer support lug attachment welds. NRI Visual examination of one steam dryer support lug, no change in wear on top and gouge on side Visual examination of surveillance sample holder attachment welds at 120° and 300°. NRI
	L1R16 (2016)	EVT-1 / VT-3	Visual examination of one steam dryer support lug. Wear on top and gouge on side are unchanged. No indications on weld. Visual examination of 12 feedwater sparger attachment welds and associated brackets. No indications on welds. No change in previously identified wear on bracket pins. Visual examination of both guide rod attachment welds. No indications.

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Attachment Welds (see Core Spray and Jet Pump sections for applicable attachment welds) (Continued)	L1R15 (2014)	VT-3	Visual examination of one steam dryer support lug. Wear on top and gouge on side are unchanged. Weld was not examined.
	L1R14 (2012)	EVT-1	Visual examination of one steam dryer support lug. Wear on top and gouge on side are unchanged. No indications on weld.
	L1R13 (2010)	EVT-1	(see core spray section for those attachment welds) Visual examination of one steam dryer support lug attachment weld (185°). No change in the wear.
		VT-1/VT-3	Visual examination of the upper and lower surveillance capsule attachment welds. No indications.
	L1R12 (2008)	EVT-1	Visual examination of 12 feedwater sparger attachment welds, both the upper and lower surveillance capsule welds at three locations. No indications.
		EVT-1	Visual examination of four steam dryer support lug attachment welds. No change in the wear on the steam dryer support lugs at 5° and 185° where previous wear was observed.
	L1R11 (2006)	EVT-1/VT-1/ VT-3	(see jet pump and core spray sections for those attachment welds.) Visual examination of 2 guide rod attachment welds, 12 feedwater sparger attachment welds, and both the upper and lower surveillance capsule welds at three locations. No indications
		EVT-1	Visual examination of the steam dryer support lug at 185° where wear was observed last outage. No change in the wear.
	L1R10 (2004)	EVT-1/VT-1/ VT-3	(see jet pump and core spray sections for those attachment welds.) Visual examination of 4-steam dryer support lug welds, 2 feed water sparger attachment welds, and both the upper and lower surveillance capsule welds at three locations. The steam dryer support lug at 185° showed signs of wear and was accepted for one cycle.
	L1R08 (1999)	EVT-1/VT-1	(see jet pump and core spray sections for those attachment welds.) Visual examination of 4 steam dryer support lug welds. No indications.
Core Shroud	L1R17 (2018)	EVT-1	In response to EPRI Letter 2016-030, the outside diameter of horizontal weld H4 was examined using

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(Note: LaSalle has two beltline horizontal welds and thereby unique designation)			the EVT-1 method. The H4 weld contains the highest peak fluence of the core shroud and has an outer diameter of 207 inches. The peak fluence is 4.94E20 n/cm^2 at 66° azimuth, with regions of high fluence at +/- 24° from 0, 90, 180, and 270° azimuths. Lowest fluence regions are at 0, 90, 180, and 270° azimuths. Listed fluence is for 22.7 EFPY, with a projected peak fluence of 6.82E20 n/cm^2 at 32 EFPY. Unit 1 is currently at 26.46 EFPY. Low fluence areas are characterized as less than 3E20 n/cm^2. Approximately 100 inches of weld length were inspected in high fluence locations, including the location of peak fluence. Approximately 73 inches of weld length were inspected in low fluence locations. No Recordable Indications were identified.
	L1R15 (2014)	UT	All accessible areas of core shroud weld H4 were ultrasonically examined. On the upper side of the weld, 89.8% of the weld length was examined, and 3.6% of the examined weld length was flawed. On the lower side of the weld, 100% of the weld length was examined, and 2.6% of the examined weld length was flawed. Due to the high fluence on H4, a site specific evaluation was performed, supporting re-inspection of weld H4 in 10 years.
	L1R14 (2012)	UT	UT of welds H2 (lower only), H3, H5, H6, and H8 (LaSalle-specific numbering). Welds H2 and H5 were not due for examination but were partially examined due to tooling availability. 100% of the accessible areas of H3, H6, and H8 were examined, and indications were less than 10% of each weld. Due to the high stresses on H8, a site specific evaluation was performed for this weld. Re-inspection of welds H3, H6, and H8 is required in 10 years.
	L1R11 (2006)	UT	UT of welds H3, H4, H6, and H8 (LaSalle-specific numbering). Coverage on H6 and H8 was less than 50%, and a site-specific flaw evaluation was performed and re-inspection is in 6 years. Note that 100% of the accessible areas were not examined, and a Deviation Disposition was submitted. Indications were less than 10% on each weld.
	L1R07 (1996)	UT	UT of welds H3, H4, H5, H6, and H8 (LaSalle-specific numbering). No indications noted except on

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			H4, where indications were 3.0%. Next inspection in 2006.
Shroud Support	L1R17 (2018)	EVT-1	Visual examination of both access hole covers. NRI Visual examination of seven shroud support plate gusset welds. NRI
	L1R16 (2016)	EVT-1	Visual examination of approximately 25% of H8a (BWRVIP Weld H8). No indications. Visual examination of six shroud support plate gussets, No indications.
	L1R14 (2012)	UT	Ultrasonic examination of 100% of the H9 weld from the vessel outside diameter. No indications.
		EVT-1	Visual examination of 100% of both access hole covers. No indications.
		EVT-1	Visual examination of 2 shroud support plate gusset welds. No indications.
	L1R13 (2010)	EVT-1	Visual examination of 7 shroud support plate gusset welds. No indications.
		EVT-1	Visual examination of approximately 12.5% of H8a. No indications.
	L1R12 (2008)	EVT-1	Visual examination of both access hole covers. No indications.
		EVT-1	Visual examination of 7 shroud support plate gusset welds. No indications.
	L1R11 (2006)	EVT-1	Visual examination of 8 shroud support plate gusset welds. No indications.
		VT-3	Visual exam of 100% of the accessible portion of the tope of H9 and both access hole covers. No indications.
		VT-3	Visual examination of the accessible portions of the bottom of H9 beneath jet pumps 5, 6, 9, and 10 due to the removal of the inlet mixers. NRI.
	L1R10 (2004)	EVT-1	Visual examination of 11 shroud support plate gusset welds. No indications.
		EVT-1	Visual examination of approximately 20% of H8a (BWRVIP weld H8). No indications.

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Shroud Support (Continued)		VT-3	Visual examination of the accessible portions of the bottom of H9 beneath all jet pumps due to the replacement of the inlet mixers. NRI.
	L1R09 (2002)	UT	Ultrasonic examination of 100% of the H9 weld from the vessel outside diameter. No indications.
	L1R08 (1999)	EVT-1	Visual examination of 6 shroud support plate gusset welds. No indications.
		EVT-1	Visual examination of approximately 2% of H8a, 23% of the top of H9, and both access hole covers. No indications.
	L1R07 (1996)	VT-1	Visual examination of both access hole covers. No indications.
Standby Liquid Control	L1R17 (2018)	VT-2	Visual examination during the system leak test. NRI
		UT	UT of the partial penetration weld and HAZ. No indications.
	L1R16 (2016)	VT-2	Visual examination during the system leak test. No indications.
	L1R15 (2014)	VT-2	Visual examination during the system leak test. No indications.
	L1R14 (2012)	VT-2	Visual examination during the system leak test. No indications.
	L1R13 (2010)	VT-2	Visual examination during the system leak test. No indications.
	L1R12 (2008)	VT-2	Visual examination during the system leak test. No indications.
		PT	Surface examination. No indications.
	L1R11 (2006)	VT-2	Visual examination during the system leak test. No indications.
	L1R10 (2004)	VT-2	Visual examination during the system leak test. No indications.
		PT	Surface examination. No indications.
	L1R09 (2002)	VT-2	Visual examination during the system leak test. No indications.
	L1R08 (1999)	VT-2	Visual examination during the system leak test. No indications.

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Jet Pump Assembly	L1R17 (2018)	EVT-1	Visual examination of RS-9 at 16 locations. No change in existing indications on risers 1/2, 3/4, and 11/12.
		VT-1	Visual examination of all twenty WD-1 main wedges. Minor changes in wear of previously identified locations. Visual examination of bolting on 2 riser brace clamps. NRI Visual examination of six auxiliary wedges. No indications. Visual examination of Jet Pump 10 AS-1/AS-2. Set Screw Gap identified and closed by applying pressure to main wedge. Visual examination of Jet Pump 16 AS-1/AS-2. Set Screw Gap identified; installed AVS hardware at this location.
		VT-3	Visual examination of two riser brace clamps. NRI Visual examination of four slip joint clamps. No change to previously identified indications. Visual examination of 17 auxiliary wedges for travel capacity only. NRI AVS Hardware installed on Jet Pumps 3, 4, 15 and 16. Post-installation VT-3 examinations performed for all locations. NRI
	L1R16 (2016)	EVT-1	Visual examination of IN-1 at 5 locations. No indications. Visual examination of IN-2 at 5 locations. No indications. Visual examination of RB-1a,b,c,d on 5 pumps. No indications. Visual examination of RS-1 at 3 locations. No indications. Visual examination of RS-2 at 3 locations. No indications. Visual examination of RS-3 at 5 locations. No indications. Visual examination of RS-6 at 2 locations. No indications. Visual examination of RS-7 at 3 locations. No indications.

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Jet Pump Assembly (Continued)			Visual examination of RS-8 at 5 locations. No indications. Visual examination of RS-9 at 12 locations. No change in existing indication on Jet Pump 1/2 riser. Visual examination of strain relief welds RS-RW on three risers. No indications.
		VT-1	Visual examination of all twenty WD-1 main wedges. No indications on two wedges. No change to previously identified indications on 14 wedges. New indications of wear on four wedges. Visual examination of fourteen auxiliary wedges. New indications of wear on wedges for Jet Pumps 4 and 7 were identified. The vessel-side aux wedge for Jet Pump 16 had reached the bottom of its available travel, and required removal. Inspection of the associated set screw AS-1 and AS-2 locations were satisfactory with no indications.
		VT-3	Visual examination of Slip Joint Clamps at four locations. New indication on one clamp, and no change to previously identified indications on the remaining three clamps.
		UT	Ultrasonic examination of RS-9 at four locations. Confirmed presence of three flaws previously identified visually. Evaluated as acceptable for one cycle.
		UT	Ultrasonic examination of AD-1 and AD-2 at eighteen locations. No indications.
	L1R15 (2014)	UT	Ultrasonic examination of thirteen Group 2 beams. No indications.
		EVT-1	Visual examination of RS-2 at 3 locations. No indications. Visual examination of IN-2 at 5 locations. No indications. Visual examination of RB-2a,b,c,d on 5 pumps. No indications. Visual examination of RS-6 on 2 pumps. No indications. Visual examination of RS-7 on 2 pumps. No indications.

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Jet Pump Assembly (Continued)			Visual examination of RS-9 on 10 pumps. No change in existing indications on riser 1/2, 3/4, 5/6, 9/10, 11/12, and no indications on other 5 risers.
		VT-3	Visual examination of all 20 slip joint clamps. Existing wear at contact point with middle vane unchanged on jet pumps 7, 13, and 14. New wear identified at contact point with middle vane on jet pump 12. No contact observed at middle vane on jet pump 10, and a review of video indicates that the clamp was not in contact after original installation and has not changed since original installation.
		VT-1	Visual examination of all 20 main wedges. No change in the wear on 14 pumps, and the other 6 pumps had no indications. All 20 main wedge rods were examined in response to BWRVIP Letter 2014-019. Existing wear was unchanged on 14 of the rods, and new wear was identified on one rod. The other 5 rods had no wear.
		VT-1	Visual examination of 5 auxiliary wedges. Existing wear on 3 auxiliary wedges showed no change, and the other 2 auxiliary wedges had no wear.
	L1R14 (2012)	UT	Ultrasonic examination of diffuser welds DF-1 (bottom only), DF-2, and DF-3 (top only) on all twenty pumps. No indications. (Note that the bottom of DF-3 is not accessible due to the presence of curved adaptor)
		EVT-1	Visual examination of RB-1 welds at 18 locations. No indications. Visual examination of RS-1 at 3 locations. No indications. Visual examination of RS-8 at 3 locations. No indications. Visual examination of RS-6 at 1 location. No indications. Visual examination of RS-7 at 1 location. No indications. Visual examination of RS-9 at 10 locations. Existing flaws at two locations unchanged; indications noted on the edges at four locations.

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Jet Pump Assembly (Continued)		VT-1/VT-3	Visual examination of twenty slip joint clamps. Recordable indications on three clamps, and the other 17 had no indications.
		VT-1	Visual examination of WD-1 on all twenty pumps. No recordable indications on 5 wedges, unchanged wear on 14 wedges, and new wear on one wedge. Visual examination of WD-2a and WD-2b on two pumps, no indications. Visual examination of set screw to inlet mixer contact on four pumps. No indications. Visual examination of 10 auxiliary wedges; recordable indications on three, and no recordable indications on 7 locations.
		VT-3	Visual external examination of the jet pump 9 assembly, including the nozzles and sensing line. No indications. Visual external examination of the jet pump 10 assembly, no indications.
	L1R13 (2010)		Performed an access study on 4 pumps to assist in tooling development for UT examination of unique welds AD-1, AD-2, and DF-3.
		EVT-1	Visual examination of RS-1 on 4 pumps. No indications.
		EVT-1	Visual examination of RS-3 on 5 pumps. No indications.
		EVT-1	Visual examination of RS-8 on 10 pumps. No indications. (Due to Laguna Verde)
		EVT-1	Visual examination of RS-9 on 10 pumps. No new indications, no apparent change in three existing indications. (Due to Laguna Verde)
		EVT-1	Visual examination of IN-1 on 5 pumps. No indications.
		VT-1	Visual examination of WD-1 on 20 pumps. No new indications, no apparent change in wear on 14 wedges. (Due to Laguna Verde)
		VT-1	Visual examination of vessel side auxiliary wedges on 9 pumps. No new indications, no apparent change in wear on 1 wedge. (Due to Laguna Verde)

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Jet Pump Assembly (Continued)		VT-1	Visual examination of shroud side auxiliary wedges on 8 pumps. No new indications. (Due to Laguna Verde)
		EVT-1	Visual examination of strain relief welds RS-RW on the 9 risers that contain the welds. No new indications. (Due to Laguna Verde)
		VT-3	Visual examination of 20 jet pump sensing lines due to SIL 420 Revision 1. No indications.
	L1R12 (2008)	UT	UT of 14 hold down beams at BB-1, BB-2, and BB-3. Indication found at BB-3 on Jet Pump 18 and beam replaced.
		VT-1	Visual examination of 9 auxiliary wedges. One indication on Jet Pump 16; accepted as is. No other indications.
		VT-1	Visual examination of WD-1 on 10 pumps. New indications noted on jet pumps 8 (an auxiliary wedge was installed) and on jet pump 11 (accepted as-is).
		EVT-1	Visual examination of 8 DF-2 welds. No indications.
		VT-3	Visual examination of 5 slip joint clamps. No indications.
		VT-1/VT-3	Visual examination of 2 riser brace clamps installed in L1R11. No indications.
		VT-3	Visual examination of the inside of the diffuser on jet pumps 19 and 20. No indications.
	L1R11 (2006)		The hold-down beams on jet pumps 5, 6, 9, and 10 were proactively replaced with low stress beams.
		EVT-1	Visual examination of RB-2 welds on 6 pumps. NRI.
			Installation of riser brace clamps on the risers for jet pumps 5/6 and 9/10 to repair the RS-9 flaws identified in L1R10.
			The slip joint clamps on jet pumps 5, 6, 9, and 10 were upgraded to a new style.
		VT-3	Visual examination of the 16 old style slip joint clamps installed in the previous outage. No indications.
		EVT-1	Visual examination of RB-1 on 12 jet pumps and RB-2 on 6 jet pumps. No indications.

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Jet Pump Assembly (Continued)		VT-1	Visual examination of WD-1 on 20 jet pumps. No change in the wear identified in L1R10.
		EVT-1	Visual examination of RS-3 on 5 pumps. No indications
	L1R10 (2004)	UT	BB-1, BB-2, and BB-3 areas of all 20 hold-down beams. Indications at BB-1 on Jet Pump 15 resulted in replacement of this beam with a low stress beam. When the inlet mixer for Jet Pump 19 was replaced, the beam was proactively replaced.
		EVT-1	Visual examination of RS-3 on 5 risers. No indications.
		VT-3	Best effort examination of the inaccessible welds AD-1, AD-2 and DF-3 on all 20 jet pumps. No indications.
		EVT-1	Visual examination of DC-3 on 8 pumps. No indications.
		EVT-1	Visual examination of DF-1 on 11 Jet Pumps. No indications.
		EVT-1	Visual examination of DF-2 on 2 Jet Pumps. No indications.
		EVT-1	Visual examination of RS-1 welds on all 10 risers. No indications.
		EVT-1	Visual examination of RS-2 welds on 5 risers. No indications.
		EVT-1	Visual examination of RS-3 on 5 risers. No indications.
		EVT-1	Visual examination of RS-6 and RS-7 on 10 jet pumps. No indications.
		EVT-1	Visual examination of RS-8 on all 20 jet pumps. No indications.
		EVT-1	Visual examination of RS-9 on all 20 jet pumps. Indications found on 3 jet pumps (5, 6, and 9). Flaw evaluation performed and required the installation of a repair in L1R11.
		EVT-1	Visual examination of IN-1 on 11 jet pumps. No indications.

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Jet Pump Assembly (Continued)		EVT-1	Visual examination of IN-2 on 11 jet pumps. No indications.
		EVT-1	Visual examination of MX-2 on 11 jet pumps. No indications.
		EVT-1	Visual examination of RB-1 on 19 of the jet pumps. No indications.
		EVT-1	Visual examination of RB-2 of 18 jet pumps. No indications.
		VT-1	Visual examination of WD-1 on 20 jet pumps. Wear identified on 10 jet pumps. Wear accepted as-is on 9 jet pumps; inlet mixer for jet pump 19 replaced with a different inlet mixer.
		VT-1	Visual examinations of 10 auxiliary wedges installed in previous outages. No indications.
			Installed auxiliary wedges at the following vessel side locations: jet pumps 4, 12, 13, 14, 15, 16, and 19. Installed auxiliary wedges at the following shroud side locations: jet pumps 1, 3, 4, 12, 14, and 16.
		EVT-1	Visual examination of the strain relief welds on the 10 risers. No indications.
			Slip joint clamps were installed on all 20 jet pump inlet mixers.
	L1R09 (2002)	VT-3	Visual examination of WD-1 on 4 jet pumps. No indications.
			Installed auxiliary wedges at the following vessel side location: jet pump 6. Installed auxiliary wedge at the following shroud side location: 11.
		VT-1	Visual examination of 2 auxiliary wedges installed in previous outages. No indications.
	L1R08 (1999)	UT	UT of 10 jet pump beams at the BB-1 and BB-2 locations. No indications.
		EVT-1	Visual examination of DF-1 on 10 Jet Pumps. No indications.
		EVT-1	Visual examination of DF-2 on 10 Jet Pumps. No indications.
		EVT-1	Visual examination of RS-1 welds on 5 risers. No indications.

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Jet Pump Assembly (Continued)		EVT-1	Visual examination of RS-2 welds on 5 risers. No indications.
		EVT-1	Visual examination of RS-3 on 5 risers. No indications.
		EVT-1	Visual examination of RS-6 and RS-7 on 10 jet pumps. No indications.
		EVT-1	Visual examination of RS-8 on 10 jet pumps. No indications.
		EVT-1	Visual examination of RS-9 on 10 jet pumps. No indications.
		EVT-1	Visual examination of IN-1 on 10 jet pumps. No indications.
		EVT-1	Visual examination of IN-2 on 10 jet pumps. No indications.
		EVT-1	Visual examination of MX-2 on 10 jet pumps. No indications.
		EVT-1	Visual examination of RB-1 on 10 jet pumps. No indications.
		EVT-1	Visual examination of RB-2 on 10 jet pumps. No indications.
		VT-3	Visual examination of WD-1 on 20 jet pumps. Due to wear observed in L1R07, the inlet mixer on jet pump 9 was replaced and the wedge was oversized, and the restrainer bracket was machined to accommodate the larger wedge. To prevent flow imbalance the inlet mixer on jet pump 10 was proactively replaced.
			Auxiliary wedges installed at the following vessel side locations: jet pumps 1, 5, 7, 8, and 10. Auxiliary wedge installed at the following shroud side location: jet pump 6.
		VT-1	Gaps at the vessel side set screw were identified on 1 pump and accepted without installation of an auxiliary wedge for one cycle. Gaps at the shroud side set screw were identified on 1 pump and accepted without installation of an auxiliary wedge for one cycle.
			The temporary auxiliary wedges installed on the vessel and shroud side of jet pump 9 were replaced with

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Jet Pump Assembly (Continued)			permanent auxiliary wedges. The wear on WD-1 was accepted for another cycle.
	L1R07 (1996)	VT-3	Visual examination of WD-1 on 2 jet pumps with wear observed on jet pump 9. Flaw evaluation determined acceptable for one cycle.
		UT	UT of all 20 jet pump holddown beams at BB-1; one indication on #9 beam; beam replaced.
		VT-1	A gap was identified on the vessel side set screw of jet pump 9, and temporary wedges were installed at both set screws on jet pump 9.
LPCI Couplings	L1R16 (2016)	EVT-1 / VT-3 / VT-1	Visual examination of four locations on one coupling (315°). No indications.
	L1R14 (2012)	EVT-1 / VT-3 / VT-1	Visual examination of four locations on one coupling (45°). No indications.
	L1R13 (2010)	EVT-1	Visual examination of one location (45-12) on one coupling (135°). No indications.
	L1R12 (2008)	EVT-1 / VT-3 / VT-1	Visual examination of four locations on one coupling (135°). No indications.
	L1R10 (2004)	EVT-1 / VT-3 / VT-1	Visual examination of four locations on all three couplings. No indications.
	L1R08 (1999)	EVT-1 / VT-3 / VT-1	Visual examination of four locations on all three couplings. No indications.
Lower Plenum	L1R14 (2012)	VT-3	Areas below the core plate made accessible due to inspection of the bottom head drain line. No indications. ICH RPV-1 at four locations. ICHGT ICH-1 at four locations. ICHS ICGT-1 at four locations. ICHS-1 at four locations. CRDH ST at eight locations. CRDH-1 at eight locations. ST RPV-1 at eight locations.

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Lower Plenum (Continued)	L1R11 (2006)	VT-3	Areas below the core plate made accessible due to the removal of the inlet mixers for jet pumps 5, 6, 9, and 10. Areas include CRD/ST-1, bottom of H9, and ICH/RPV-1. No indications.
	L1R10 (2004)	VT-3	Areas below the core plate made accessible due to the removal of the inlet mixer for jet pump 19. Areas include CRD/ST-1, bottom of H9, and ICH/RPV-1. No indications.
	L1R09 (2002)	VT-3 / EVT-1	Visual examination of the fuel support guide tube pins (FS/GT-ARPIN-1) at 20 locations, CRGT-1 at 20 locations, CRGT-2 at 21 locations, and CRGT-3 at 21 locations. No indications.
	L1R08 (1999)	VT-3	Visual examination of the fuel support guide tube pins (FS/GT-ARPIN-1) at 19 locations, the CRGT-1 at 19 locations. No indications.
Steam Dryer	L1R17 (2018)	VT-1	Visual examination of Access Hole Cover. No indications. Visual examination of 1 Drain Channel Vertical Weld. NRI Visual examination of three horizontal welds. NRI Visual examination of 13 vertical welds. No change to previously identified indications. Visual examination of 18 Tie Bars with no change in previously identified indications. Visual examination of 9 Tie Rods with no change in previously identified indications. Visual examination of one lifting lug and three lifting lug brackets with no change to previously identified indications. Visual examination of one Lower Guide Bracket. NRI
	L1R16 (2016)	VT-1	Visual examination of one Drain Channel Vertical Weld. No indications. Visual examination of four horizontal welds. No indications. Visual examination of 29 vertical welds. No change to previously identified indications on V09-090, V04a-090, V04c-090, V04c-270, and V13-270. New indication on V04b-090. Visual examination of nine Tie Bars with no change in one previously identified indication.

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Steam Dryer (Continued)			Visual examination of four Tie Rods with no change in one previously identified indication. Visual examination of one lifting lug bracket location with no change in a previously identified indication.
	L1R15 (2014)	VT-1	Visual examination of lifting lug brackets at two locations, and the one flawed bracket was unchanged from last outage. Visual examination of one tie rod with no change in degradation. Visual inspection of two vertical welds, and no change in the indications. Visual inspection of portions of the Upper Support Ring with no change in the indications.
	L1R14 (2012)	VT-1	Visual examination of upper guide bracket with no indications Visual examination of existing flaws; Vertical welds in three locations with no changes noted; Tie Rods at two locations with no changes noted; Lifting lug welds at four locations with no changes noted; Upper support ring for 360 degrees with three new indications noted. All were evaluated and accepted without repair.
	L1R13 (2010)	VT-1	Examination of the dryer included 21 tie bars, 23 vertical welds, 5 horizontal welds, and 5 tie rods. The upper support ring was examined for 360°. The lug and four brackets on two lifting assemblies (225° and 315°) were examined. Indications identified previously were examined and there were no changes in any indications. New indications were noted on the lifting lug #2, #3, and #4 brackets at 315°, tie rod 17-90°, V01-270°, and the USR from 180-360°. All indications were evaluated and accepted without repair.
	L1R12 (2008)	VT-1	All welds on the half of the dryer between 0° and 180°, including drain channels, tie bars, vertical welds, horizontal welds, and tie rods on both sides of the dryer. New indications were identified on TB-03, TB-08, TR-05-270, TR-05-90, TR-06-270, TR-06-90, TR-09-270, TR-09-90, TR-10-270, TR-10-90, TR-13-270,

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Steam Dryer (Continued)			TR-13-90, TR-14-270, TR-14-90, TR-16-90, TR-17-270, TR-17-90, TR-18-270, TR-18-90, V04a-90, V04c-90, V05-90, V06-90, V09-90, V10-90, V13-90, V14-90, V15-90, V17-90, and upper support ring between 90-180. All were evaluated and accepted without repair.
		VT-3	General inspection of half of the dryer between 180° and 360° above the waterline. No indications.
	L1R11 (2006)	EVT-1	Re-inspection of lower guide bracket at 180° and hood A plate 5 where previous indications existed and were stop drilled. No new indications.
		VT-1	All welds on the half of the dryer between 180° and 360°: access hole cover, drain channels, vertical welds and horizontal welds. No new indications. Indications at V13-270 and V14-270 were re-examined and there was no growth.
	L1R10 (2004)	VT-3	Visual exams on the end panels and welds; one indication on bank B, bank 2 which was stop drilled, and one previous indication on bank D bank 4 and there was no growth. All four lifting lugs and their brackets (previous indications at five locations with no growth), 100% of tie rods (10 previous indications unchanged), 100% of tie bars
		VT-1	Visual examination of upper and lower guide brackets with an indication on the lower guide at 180° which was stop drilled, all horizontal welds, all horizontal plates (hood A plate 5 indication was stop drilled), hood F plate 1 (previous indication did not grow), 100% of the tie bars
Top Guide	L1R17 (2018)	EVT-1	Visual examination of seven top guide beam cells. NRI
		VT-3	Visual examination of two top guide C-Clamps. NRI
	L1R14 (2012)	EVT-1	Visual examination of ten grid cells; two metal slivers identified.
		VT-3	Visual examination of one c-clamp; no indications.
	L1R13 (2010)	EVT-1	Visual examination of two grid cells; no indications.
		VT-3	Visual examination of one c-clamp; no indications.
	L1R12 (2008)	VT-3	Visual examination of two c-clamps; no indications.

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Top Guide (Continued)	L1R10 (2004)	VT-3	Visual examination of two c-clamps; no indications.
	L1R08 (1999)	VT-3	Visual examination of four c-clamps; no indications.
Vessel	L1R12 (2008)	VT-3	Inspection of the general condition of the RPV interior surface from the RPV closure flange elevation to the Steam Dam, 360° around the RPV interior. NRI.
			Inspection of the general condition of the RPV interior surface at the shroud support elevation above the gussets, 360° around the RPV interior. NRI.
	L1R10 (2004)	VT-3	Inspection of the general condition of the RPV interior surface from the RPV closure flange elevation to the Steam Dam, 360° around the RPV interior. NRI.
			Inspection of the general condition of the cladding at the Steam Dam elevation, 360° around the RPV interior. NRI.
			Inspection of the general condition of the RPV interior surface from below the core plate to the shroud support plate. NRI.
	L1R09 (2002)	VT-3	Inspection of the general condition of the RPV interior surface from the RPV closure flange elevation to the Steam Dam, 360° around the RPV interior. NRI.
			Inspection of the general condition of the cladding at the Steam Dam elevation, 360° around the RPV interior. NRI.
DM Welds – BWRVIP-75-A	L1R13 (2010)	UT	Inspection of 16 Category C DM welds; 10 automated and 6 manual. No indications
			Two Category D DM welds were identified on a flow venturi in the drywell in 2009, and the flow venturi was removed and replaced with a venturi that does not contain any welds. Details will be provided to the BWRVIP and NRC under a separate letter.
	L1R12 (2008)	UT	There were no dissimilar metal welds examined this outage.
Integrated Surveillance Program	L1R13 (2010)		Removed the surveillance capsule at 120° to support analysis of the contents under the ISP.

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Moisture Separator	L1R17 (2018)	VT-3	Visual examination of seven middle support ring gusset locations and one standpipe. No change in previously identified indications.
	L1R16 (2016)	UT	Ultrasonic examination of all 24 shroud head bolts. No indications.
Other	L1R17 (2018)	VT-1	Visual examination of three IRM/SRM dry tubes (upper two feet and verification of plunger engagement per SIL 409). RI for plungers not fully engaged; replaced one dry tube and accepted two as-is for one cycle.
			Visual examination of Surveillance Sample Holder at 30° in accordance with interim guidance contained in EPRI Letter 2018-017. NRI
	L1R16 (2016)	VT-1	Visual examination of four IRM dry tubes (upper two feet and verification of plunger engagement per SIL 409). RI for one plunger not fully engaged with top guide, accepted as-is for one cycle.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	1994 (1R05)	VT-3	VT-3 examination of OD of welds H-1, H-2, H-3, H-4, H-5, H-6, and H-7. No indications identified.
	1996 (1R06)	UT	Baseline Category "B" UT examinations of welds H-3, H-4, H-5 and H-7 per BWRVIP-01, Rev. 1. Minor indications identified on H-3. No indications identified on H-4, H-5 and H-7.
	2006 (1R11)	UT & EVT-1	Category "B" welds were re-examined by UT. Due to the identification of cracking, the scope was expanded and the shroud reclassified as a Category "C". All horizontal welds except H1 were UT examined from two sides using Phased-Array on most ring (H2 LKUP, H3 LKDN and H6 LKDN) locations. Recently demonstrated H1 emersion technique looking down was not successful. Vertical welds V-15, 16, 17 and 18 in the beltline screened-in and were UT examined from ID. Vertical welds V-7 and 8 at the top guide and V-25 and 26 below the core plate also screened-in and were visually (EVT-1) examined from the shroud OD.
	2012 (1R14)	UT	A two-sided UT exam was performed on the H1, H4, V7, V8, V15, V16, V17, V18, V25, and V26. Indications were identified on H1, H4, V17, and V18. No indications were identified on V7, V8, V15, V16, V25, and V26. All welds were evaluated to be acceptable for 10 years (max frequency).
	2016 (1R16)	UT	A two-sided UT exam was performed on the H2, H3, H5, H6, and H7 welds. Indications were identified on all five welds. However, all welds were evaluated to be acceptable for 10 years (max frequency).
Shroud Support	1987 (1R01), 1990 (1R03), &1994(1R05)	VT-3	VT-3 examination of H-8 and H-9 welds from annulus. No indications identified.
	1998 (1R07)	VT-3	50% of shroud legs @ 10°, 30°, 60° Azimuths and 50% of annulus floor. No indications identified.
	2000 (1R08)	EVT-1	Visual examination of H-8 and H-9 welds from annulus at 0 and 180 Degree azimuths. No indications identified.
	2004 (1R10)	EVT-1 & UT	Visually examined H-8 from annulus at 0° and 180° and UT examined 10% of H9. One indication was identified by UT on H9 that was acceptable to the requirements of IWB-3000.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Shroud Support (Cont.)	2010 (1R13)	EVT-1	Visually examined H-8 from annulus at 0° and 180°. No indications identified.
	2014 (1R15)	UT	UT examined 10.4% of H9. Two indications were identified by UT and were acceptable per IWB-3510-1.
	2016 (1R16)	EVT-1	Visually examined H-8 from annulus at 0° and 180°. No indications identified.
Core Spray Piping	1987 (1R01) to 1996 (1R06)	VT-1	Enhanced VT-1 (1 mil resolution) examination performed every refueling outage on piping and welds per IEB 80-13. No indications identified.
	1998 (1R07)	UT & CSVT-1	UT baseline and visual of piping. No indications identified.
	2002 (1R09)	UT	UT all creviced welds plus 25% sample of P4(c) welds. One indication was identified on P3bA (~ 3.1 inches). No other indications were identified.
		EVT-1	EVT-1 of un-demonstrated welds P4dB, P4dC, P4dD, P8aA, P8aB, P8aC, and P8aD. No indications identified.
	2004 (1R10)	EVT-1	EVT-1 of previous P3bA indication. No change in identified length. EVT-1 of un-demonstrated welds P4dA, P8aA, P8aB, P8aC, and P8aD. No indications identified.
	2006 (1R11)	UT & EVT-1	UT of previous P3bA indication (~ 2.8 inches – no change) and most other creviced welds. UT equipment issues on 13 of 24 welds and alternatively EVT-1 examined. No new indications identified.
		EVT-1	EVT-1 of un-demonstrated welds P4dB, P8aA, P8aB, P8aC, and P8aD. Two indications were identified on P8aC as weld discontinuities that were likely opened up from construction. No other indications were identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping (Cont.)	2008 (1R12)	EVT-1	EVT-1 of previous P3bA indication. No change in identified length. EVT-1 of un-demonstrated welds P4dC, P8aA, P8aB, P8aC, and P8aD. No change in previous discontinuities. No new indications identified. Due to UT failure in 2006, the following 13 welds were visually inspected in 2008 - P3aB, P3bB, P4aB, P4aC, P4aD, P5B, P6B, P6D, P7B, P8bA, P8bB, P8bC, and P8bD. These welds are expected to return to a UT reinspection frequency of 2R after the next UT in 2010. No indications identified.
	2010 (1R13)	UT	One-sided UT examination of P1, P2, P3a, P3b, and P8b welds was performed. Two-sided UT examination of P4b, P5, P6, and P7 welds was performed. UT of previous P3bA indication indicated no change in flaw length. No other indications were identified.
		EVT-1	EVT-1 of the far-side of the P1, P2, P3a, P3b, and P8b welds was performed. EVT-1 of the un-demonstrated P4dD and P8a welds was also performed. No change in previous discontinuities noted in P8aC weld. No indications were identified.
	2012 (1R14)	EVT-1	EVT-1 of the far-side of the P1, P2, P3a, P3b, P4b, and P8b welds was performed. EVT-1 of the un-demonstrated P4dA and P8a welds was also performed. No change in previous discontinuities noted in P8aC weld. A new indication was detected in the P3bA weld. After review of previous UT data, it was determined that this new indication was a part of the original flaw seen by UT, and therefore, not new. No change in growth occurred in the P3bA flaw. No other indications were identified.
	2014 (1R15)	UT	Two-sided UT examination of P4cA, P4cB, P4cC, and P4cD was performed. UT of previous P3bA indication was performed with no change in flaw length identified. No other indications were identified.
		EVT-1	EVT-1 of the P1, P2, P3a, P3b, P5, P6, P7, and P8b welds (all loops) was performed. EVT-1 of the un-demonstrated P4dB and all P8a welds was also performed. No change in previous discontinuities noted in P8aC weld. No indications were identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping (Cont.)	2016 (1R16)	EVT-1	EVT-1 of the P1, P2, P3a, P3b, P5, P6, P7, and P8b welds (all loops) was performed. EVT-1 of the un-demonstrated P4dC and all P8a welds was also performed. EVT-1 of previous P3bA indication was performed with no change in flaw length identified. No change in previous discontinuities noted in P8aC weld. No indications were identified in other piping welds.
	2018 (1R17)	UT	Two-sided UT examination of P4aA, P4bA, P4cA, P5A, P6A and P7A was performed. One-sided UT of P3aA, P3bA and P8bA was performed. No change in the previous P3bA indication was found. No other indications were identified.
		EVT-1	EVT-1 of the P4dA, P4dD, and P8aA welds was performed. Additionally, the far-side of the P3aA, P3bA and P8bA welds was EVT-1 examined to compliment the one-sided UT. No indications were identified.
Core Spray Piping Brackets	1987 (1R01) to 1996 (1R06)	VT-1	VT-1 examination performed every refueling outage on piping and welds per IEB 80-13. No indications identified.
	1998 (1R07)	CSVT-1	Examined all eight brackets (PB1 through PB8). No indications identified.
	2000 (1R08)	EVT-1	Examined brackets PB1 and PB2. No indications identified.
	2002 (1R09)	EVT-1	Examined brackets PB3 and PB4. No indications identified.
	2004 (1R10)	EVT-1	Examined brackets PB5 and PB6. No indications identified.
	2006 (1R11)	EVT-1	Examined brackets PB7 and PB8. PB7 was identified with indications on the two upper bolts. In each case, one of two tack welds was found to be cracked. No other indications identified.
	2008 (1R12)	EVT-1	Examined brackets PB1 and PB2. No indications identified. PB7 indication was re-inspected with no change in condition noted.
	2010 (1R13)	EVT-1	Examined bracket PB3 and PB4. No indications identified. PB7 indication was re-inspected with no change in condition noted.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping Brackets (Cont.)	2012 (1R14)	EVT-1	Examined bracket PB5 and PB6. No indications identified. PB7 indication was re-inspected with no change in condition noted.
	2014 (1R15)	EVT-1	Examined brackets PB7 and PB8. No change was identified in the PB7 tack weld indication. No other indications identified.
	2016 (1R16)	EVT-1	Examined brackets PB1 and PB2. No indications identified.
	2018 (1R17)	EVT-1	Examined brackets PB3 and PB4. No indications identified.
Core Spray Sparger	1987 (1R01) to 1996 (1R06)	VT-1	Enhanced VT-1 (1 mil resolution) examination performed every refueling outage on piping and welds per IEB 80-13. No indications identified.
	1998 (1R07)	EVT-1 & CSVT-1	EVT-1/CSVT-1 all spargers. No indications identified.
	2000 (1R08)	EVT-1	EVT-1 examined welds S1A, S1B, S2aA, S2aB, S2bA, S2bB, S4aA, S4aB, S4bA, and S4bB. No indications identified.
		VT-1	VT-1 examined welds S3aXXA, S3bXXA, and S3dXXA on nozzles 1A through 65A. No indications identified.
	2002 (1R09)	EVT-1	EVT-1 examined welds S1C, S1D, S2aC, S2aD, S2bC, S2bD, S4aC, S4aD, S4bC, and S4bD. No indications identified.
		VT-1	VT-1 examined welds S3aXXB, S3bXXB, and S3dXXB on nozzles 1B through 65B. VT-1 examined welds S3c4B, S3d4B, S3c62B, and S3d62B. No indications identified.
	2004 (1R10)	EVT-1	EVT-1 examined welds S1A, S1B, S2aA, S2aB, S2aD, S2bA, S2bB, S4aA, S4aB, S4bA, and S4bB. No indications identified.
		VT-1	VT-1 examined welds S3aXXC, S3bXXC, and S3dXXC on nozzles 1C through 65C. No indications identified.
	2006 (1R11)	EVT-1	EVT-1 examined welds S1C, S1D, S2aC, S2aD, S2bC, S2bD, S4aC, S4aD, S4bC, and S4bD. No indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger (Cont.)	2006 (1R11) (Cont.)	VT-1	VT-1 examined welds S3aXXD, S3bXXD, and S3dXXD on nozzles 1D through 65D. VT-1 examined welds S3c4D, S3d4D, S3c62D, and S3d62D. No indications identified.
	2008 (1R12)	EVT-1	EVT-1 examined welds S1A, S1B, S2aA, S2aB, S2bA, S2bB, S4aA, S4aB, S4bA, and S4bB. No indications identified.
		VT-1	VT-1 examined welds S3aXXA, S3bXXA, and S3dXXA on nozzles 1A through 65A. Re-examined welds S3aXXD, S3bXXD, and S3dXXD on nozzles 1D through 65D due to camera quality issues from 2006. No indications identified.
	2010 (1R13)	EVT-1	EVT-1 examined welds S1C, S1D, S2aC, S2aD, S2bC, S2bD, S4aC, S4aD, S4bC, and S4bD. No indications identified.
		VT-1	VT-1 examined welds S3aXXB, S3bXXB, and S3dXXB on nozzles 1B through 65B. VT-1 examined welds S3c4B, S3d4B, S3c62B, and S3d62B. No indications identified.
	2012 (1R14)	EVT-1	EVT-1 examined welds S1A, S1B, S2aA, S2aB, S2bA, S2bB, S4aA, S4aB, S4bA, and S4bB. No indications identified.
		VT-1	VT-1 examined welds S3aXXC, S3bXXC, and S3dXXC on nozzles 1C through 65C. Minor damage identified (raised metal) on nozzle 54C at 268 deg. Evaluated as acceptable. No other indications identified.
	2014 (1R15)	EVT-1	EVT-1 examined welds S1C, S1D, S2aC, S2aD, S2bC, S2bD, S4aC, S4aD, S4bC, and S4bD. No indications identified.
		VT-1	VT-1 examined welds S3aXXD, S3bXXD, and S3dXXD on nozzles 1D through 65D. VT-1 examined welds S3c4D, S3d4D, S3c62D, and S3d62D. Minor raised metal piece on nozzle 54C at 268 deg was re-inspected with no change. No other indications identified.
	2016 (1R16)	EVT-1	EVT-1 examined welds S1A, S1B, S2aA, S2aB, S2bA, S2bB, S4aA, S4aB, S4bA, and S4bB. No indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger (Cont.)	2016 (1R16) (Cont.)	VT-1	VT-1 examined welds S3aXXA, S3bXXA, and S3dXXA on nozzles 1A through 65A. Minor raised metal piece on nozzle 54C at 268 deg was re-inspected with no change. No other indications identified.
	2018 (1R17)	VT-3	VT-3 examined welds S3aXXB, S3bXXB, and S3dXXB on nozzles 1B through 65B. VT-3 examined welds S3c4B, S3d4B, S3c62B, and S3d62B. Also, minor raised metal piece on nozzle 54C at 268 deg was re-inspected with no change. No other indications identified.
Core Spray Sparger Brackets	1987 (1R01) to 1996 (1R06)	VT-1	VT-1 examination performed every refueling outage on piping and welds per IEB 80-13. No indications identified.
	1998 (1R07)	CSVT-1	Examined all brackets (SB01 through SB12). No indications identified.
	2000 (1R08)	VT-1	Examined brackets SB01, SB02, SB03, SB10, SB11 and SB12. No indications identified.
	2002 (1R09)	VT-1	Examined brackets SB04, SB05, SB06, SB07, SB08, and SB09. No indications identified.
	2004 (1R10)	VT-1	Examined brackets SB01, SB02, SB03, SB10, SB11, and SB12. The middle bracket on SB11 was found slightly deformed. No other indications identified.
	2006 (1R11)	VT-1	Examined brackets SB04, SB05, SB06, SB07, SB08, and SB09. SB08 was found slightly deformed, no other indications identified.
	2008 (1R12)	VT-1	Examined brackets SB01, SB02, SB03, SB08, SB10, SB11, SB12. Discrepancies on SB08 and SB11 were re-examined with no change in condition.
	2010 (1R13)	VT-1	Examined brackets SB04, SB05, SB06, SB07, SB08, and SB09. SB08 was re-examined with no change in condition. No other indications identified.
	2012 (1R14)	VT-1	Examined brackets SB01, SB02, SB03, SB10, SB11, SB12. SB11 indication (bent bracket) was re-examined with no change in condition. No other indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger Brackets (Cont.)	2014 (1R15)	VT-1	Examined brackets SB04, SB05, SB06, SB07, SB08, and SB09. SB08 was re-examined with no change in condition. No other indications identified.
	2016 (1R16)	VT-1	Examined brackets SB01, SB02, SB03, SB10, SB11, SB12. SB11 indication (bent bracket) was re-examined with no change in condition. No other indications identified.
	2018 (1R17)	VT-1	SB08 bracket attachment weld inspection found two linear indications on the shroud ID. Review of previous video identified that these indications were present but not reported in 1R15. Both indications were evaluated as acceptable as-is. Also, SB11 indication (bent bracket) was re-examined with no change in condition.
Top Guide (Rim, etc.)	1987 (1R01)	VT-3	VT-3 examination of accessible welds and surfaces. No indications identified.
	1990 (1R03)	VT-3	VT-3 examination of accessible welds and surfaces. Also, VT-3 examination of 32 wedges, bolts, and keepers. No indications identified.
	1994 (1R05)	VT-1 & VT-3	VT-1 examination of accessible welds and surfaces at core locations 14-31, 22-23, 22-39, 30-15, 30-47, 38-23, 38-39, and 46-31. Also, VT-3 examination of 32 wedges, bolts, and keepers. No indications identified.
	1998 (1R07)	VT-1 & VT-3	VT-1 of grids 30-31 and 34-35. Also, VT-3 surfaces and welds (0°-180°) including wedges, bolts and keepers. No indications identified.
	2000 (1R08)	VT-3	C-Clamps at 0°, 90°, 180° and 270°. No indications identified.
	2004 (1R10)	VT-3	C-Clamps at 0°, 90°, 180° and 270°. No indications identified.
	2012 (1R14)	EVT-1	EVT-1 examined 10 top guide cell locations (14-47, 18-07, 18-55, 22-23, 22-39, 30-51, 38-23, 46-47, 50-47, and 54-35). No indications identified.
	2014 (1R15)	VT-3	C-Clamps at 0°, 90°, 180° and 270°. No indications identified.
	2018 (1R17)	EVT-1	EVT-1 examined 9 top guide cell locations (02-19, 06-15, 18-27, 18-35, 26-19, 26-43, 34-19, 34-43, and 42-35). No indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Plate (Rim, etc.)	1998 (1R07)	VT-3	VT-3 welds and surfaces, including 17 hold down bolts/nuts and 7 fuel support castings. No indications identified.
SLC			N/A, SLC connects to Core Spray System.
Jet Pump Assembly	1987 (1R01), 1990 (1R03), &1994(1R05)	VT-3	VT-3 examination of all jet pump components No indications identified.
	1998 (1R07)	MVT-1	Examined all RB-1, RB-2, RS-1, RS-2, RS-3, RS-6, RS-7, RS-8, RS-9, IN-4, MX-2, WD-1, DF-1, DF-2, AD-1 and AD-2 welds on JP 1 through JP 10. Also, JP19/20 RS-3 weld was examined. No indications identified.
	2000 (1R08)	EVT-1	EVT-1 examined RS-1, RS-2, RS-3, RS-6, RS-7, RS-8, RS-9, IN-4, MX-2, DF-1, DF-2, AD-1 and AD-2 welds, as well as all RB-1 welds and RB-2c on JP 11 and JP 12. EVT-1 examined RS-1, RS-2, RS-3, RS-6, RS-7, IN-4, MX-2, DF-1, DF-2, AD-1 and AD-2 welds on JP 13 and JP14. EVT-1 examined RS-1, RS-2, RS-3, RS-6, RS-7, RS-8, and RS-9, as well as RB-1a, b, d and all RB-2 welds on JP 15 and JP 16. Also, examined IN-4, MX-2, DF-1, DF-2, AD-1 and AD-2 welds on JP 15. No indications identified.
		VT-1	VT-1 examined WD-1 for JP11, JP12, JP13, JP14 and JP15. No indications identified.
	2002 (1R09)	EVT-1	EVT-1 examined all RB-1 and RB-2 welds on JP13/14 riser. EVT-1 examined RB-2a, RB-2b, and RB-2d welds on JP11/12 riser. EVT-1 examined IN-4, MX-2, DF-1, DF-2, AD-1 and AD-2 welds on JP16, and the RB-1c weld on JP15/16 riser. EVT-1 examined RS-3 weld on JP17/18 riser. EVT-1 examined RS-8 and RS-9 on all ten risers due to scope expansion from an indication identified on JP13/14 RS-9 weld (~0.38 inches). No other indications identified.
		VT-1	VT-1 examined WD-1 for JP1, JP2, JP13, and JP14. No indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2004 (1R10)	EVT-1	EVT-1 examined RS-3, RS-6, and RS-7 welds on JP 1, JP 2, JP3, JP 4, JP 7, JP 8, JP 9, and JP 10. EVT-1 examined RS-3 weld on JP19/20 riser. EVT-1 examined RS-1, RS-2, RS-6, RS-7, RS-8, RS-9, IN-4, MX-2, DF-1, DF-2, AD-1 and AD-2 welds, as well as all RB-1 and RB-2 welds on JP 17 and JP 18. Re-examined previous indication JP13/14 RS-9 by EVT-1. No change in flaw length. No other indications were identified.
		VT-1	VT-1 examined WD-1 on JP16, JP17, and JP18. Initially, suspected wedge movement on JP18 prompted an investigation into the condition of the setscrews. Both tack welds on the shroud side set screw were cracked on JP18. The setscrew was staked and an auxiliary wedge installed. No other indications were identified.
	2006 (1R11)	EVT-1	EVT-1 examined RS-1 and RS-2 welds on risers of JP3/4, JP5/6, JP7/8, JP9/10, and JP19/20. EVT-1 examined RS-3 weld on JP11/12, JP13/14 and JP15/16 risers. EVT-1 examined all RB-1 welds on JP7/8, JP9/10, and JP11/12 risers. EVT-1 examined all RB-2 welds on JP1/2, JP7/8, and JP9/10 risers. EVT-1 examined RS-6 and RS-7 welds on JP5/6, JP13/14, and JP15/16 risers. EVT-1 examined IN-4 weld on JP 11, and JP 16. EVT-1 examined IN-4, MX-2, DF-2, and AD-1 welds on JP 9. EVT-1 examined DF-2 on JP 10. EVT-1 examined DF-2, AD-1, and AD-2 welds on JP 6 and JP 7. EVT-1 examined previous indication at JP13/14 RS-9. No change in flaw length. No other indications were identified.
		VT-1	VT-1 examined all twenty WD-1, AS-1 and AS-2 locations in response to wear identified on Unit 2 in 2005. Gaps were identified on vessel side setscrews of JP4, JP7, JP9, JP13, JP15, JP19, and JP20. Cracked tack welds were identified on shroud side setscrews of JP8, JP12, JP14, JP17, JP18, and JP19. Slip Joint Clamps were proactively installed on all 20 JPs. Five auxiliary wedges installed: two at JP13 (pre-emptive due to RS-9 flaw), two at JP14 (pre-emptive due to RS-9 flaw), and one at JP15 (vessel side only due to 23 mil gap). No other indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2006 (1R11) (Cont.)	VT-1 (Cont.)	Visually examined auxiliary wedge previously installed at JP18 shroud side setscrew. No indications identified.
	2008 (1R12)	EVT-1	EVT-1 examined RS-3, RS-7, RS-8, and RS-9 weld on JP17/18 riser. No indications identified. EVT-1 examined IN-4, MX-2, DF-1, DF-2, AD-1, AD-2, RS-3, RS-6, RS-7, RS-8, and RS-9 welds, as well as all RB-1 and RB-2 welds on JP 19 and JP 20. No indications identified. EVT-1 examined previous indication at JP13/14 RS-9. No change in flaw length. No other indications were identified.
		VT-1	VT-1 examined all twenty main wedges (WD-1). Minor wedge wear was identified on JP 18, JP 19, and JP 20. WD-2a, WD-2b, MX-7, welds were also examined on JP 18, JP 19, and JP 20 as part of the expanded scope required from identifying main wedge wear. Minor wedge rod wear was identified on JP 4, JP 18, JP 19, and JP 20. Since slip joint clamps (installed in 2006) mitigate slip joint bypass leakage vibrations, this main wedge damage and rod wear was determined to be caused by turbulent flow. Two auxiliary wedges were installed around both the shroud and vessel side set screws on JP 19 and JP 20. JP 18 has one previously installed auxiliary wedge around the shroud side set screw. The main wedge wear and rod wear were found to be acceptable for continued service without repair. Set screw gaps (AS-1) and tack welds (AS-2) were inspected at all locations not blocked by an auxiliary wedge. Gaps were identified on vessel side setscrews of JP 2 (20 mils), JP 3 (5 mils), JP 9 (14 mils), and JP 20 (8 mils). One auxiliary wedge was installed to repair the gap on the vessel side set screw of JP 2. The remaining gaps were evaluated as acceptable without repair. Previously identified gaps at JP 4, JP 7, and JP 19 are no longer visible. Cracked tack welds were re-inspected on the shroud side setscrews of JP 8, JP 12, JP 14, JP 17, and JP 19 with no change in condition noted. All 20 Slip Joint Clamps were examined after one cycle of operation. No indications were identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2008 (1R12) (Cont.)	VT-3	Five auxiliary wedges were inspected after one cycle of operation: two at JP13, two at JP14, and one at JP15 (vessel side). No indications were identified.
	2010 (1R13)	EVT-1	EVT-1 performed on RS-1, RS-2, RS-8, and RS-9 of both JP01-02 and JP05-06 risers. EVT-1 performed on RS-8 and RS-9 of six jet pump risers (JP03-04, JP07-08, JP09-10, JP11-12, JP13-14, and JP15-16). One previously identified indication on JP13-14 RS-9 weld was unchanged. No other indications identified.
		VT-1	VT-1 examined all twenty main wedges (WD-1). Previous wedge wear identified on JP18, JP19, and JP20 had no change in condition reported. Minor wedge rod wear was identified on JP08, and previously identified rod wear on JP04, JP18, JP19, and JP20 had no change in condition reported. No indications were identified on the wedge rod tack welds of JP04, JP08, JP18, JP19, and JP20. Set screw gaps (AS-1) and tack welds (AS-2) were inspected at all locations with previously identified indications. Gaps were identified on vessel side setscrews of JP03 (4 mils) and JP09 (13 mils). These gaps were acceptable without repair. Cracked tack welds were re-inspected on the shroud side setscrews of JP08, JP12, JP14, JP17, and JP19 with no change in condition noted, except that the second tack weld of JP17 now has a small indication identified. All were evaluated as acceptable. All 20 Slip Joint Clamps were inspected. The mid-support of two clamps (JP11 and JP19) was identified as having minor wear into the top ledge of the diffuser. One clamp (JP17) was identified as having slight movement from its original installed position. Indications were evaluated as acceptable with no repairs or re-work performed. No other indications were identified.
		VT-3	Five auxiliary wedges were inspected after one cycle of operation: JP02 VS, JP19 SS, JP19 VS, JP20 SS, and JP20 VS. No indications were identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2012 (1R14)	EVT-1	EVT-1 performed on IN-4, RS-3, RS-6, RS-7, RB-1a (thru d) and RB-2a (thru d) welds of JP01 and JP02. EVT-1 performed on IN-4, RS-1, RS-2, RS-6, RS-7, RS-8, RS-9, RB-1a (thru d) and RB-2a (thru d) welds of JP11 and JP12. EVT-1 performed on RS-3 of JP03-04, JP05-06, and JP09-10 risers. EVT-1 performed on JP09 MX-7 and JP09-10 RB-1a (thru d), RS-6, RS-8, and RS-9 welds as part of expanded scope required due to identification of minor wedge wear on JP09 main wedge.. One previously identified indication on JP13-14 RS-9 weld was reexamined by EVT-1 and found to be unchanged. No other indications identified.
		VT-1	VT-1 examined all twenty main wedges (WD-1). Previous wedge wear identified on JP18, JP19, and JP20 had no change in condition reported. New minor wedge wear identified on JP09. Minor wedge rod wear was identified on JP02, and previously identified rod wear on JP04, JP08, JP18, JP19, and JP20 had no change in condition reported. Set screw gaps (AS-1) and tack welds (AS-2) were inspected at all locations with previously identified indications. Gaps were identified on vessel side setscrews of JP01 (11 mils), JP03 (3 mils), JP04 (6 mils), JP05 (12 mils), JP06 (5 mils), JP07 (17 mils), JP09 (3 mils), JP11 (10 mils), JP17 (9 mils), and JP18 (3 mils). These gaps were acceptable except for JP07 which required installation of an Auxiliary Wedge. Cracked tack welds were re-inspected on the shroud side setscrews of JP08, JP12, JP14, JP17, and JP19 with no change in condition noted, except that JP01 now has a small indication identified in one of two tack welds on the shroud side setscrew. All were evaluated as acceptable. Indications were reinspected on JP11 and JP17 slip joint clamps (SJC) with no changes noted. JP19 SJC indication had a slight increase in wear but was evaluated as acceptable.
		VT-3	JP18 Shroud Side Aux Wedge was inspected with no indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2012 (1R14) (Cont.)	UT	JP diffuser UT was performed on AD-1, AD-2, DF-1, DF-2, and MX-2 welds of JP01, JP04, JP05, JP11, JP12, JP13, JP14, JP15, JP16, JP17, JP18, JP19, and JP20. UT was also performed on AD-1, AD-2, DF-1, and MX-2 welds of JP02, and on DF-1, DF-2, and MX-2 welds of JP10. No indications were identified.
	2014 (1R15)	EVT-1	EVT-1 performed on IN-4, RS-1, RS-2, RS-6, RS-7, RS-8, RS-9, RB-1a (thru d) and RB-2a (thru d) welds of JP15 and JP16. Also, an EVT-1 performed on RS-3 of JP7/8 risers. No indications identified. EVT-1 performed on JP13 MX-7 and JP13/14 RB-1a (thru d), and RS-6 welds as part of expanded scope required due to identification of minor wedge wear on JP13 main wedge. No indications identified. EVT-1 performed on JP9 RS-9 weld as part of expanded scope required due to identification of minor change in wedge wear on JP9 main wedge. No indications identified. One previously identified indication on JP13/14 RS-9 weld was reexamined by EVT-1 and found to be unchanged. No other indications identified.
		VT-1	VT-1 examined all twenty main wedges (WD-1). Previous wedge wear identified on JP17, JP18, JP19, and JP20 had no change in condition reported. New minor wedge wear identified on JP13 and JP9 had additional wedge wear compared to previous exam. New and/or additional rod wear was identified on JP2, JP3, JP4, JP9, JP10, JP14, JP15, and JP17. Previously identified rod wear on JP08, JP18, JP19, and JP20 had no change in condition reported. Set screw gaps (AS-1) were inspected at all locations not repaired by Aux Wedge. Gaps were identified on VS setscrews of JP01 (0.007), JP03 (0.007), JP04 (0.012), JP05 (0.017), JP06 (0.012), JP09 (0.008), JP11 (0.014), JP17 (0.006), and JP18 (0.007). These gaps were acceptable without the need for repair, except for JP05. JP05 main wedge was tapped and the .017" gap was closed during 1R15.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2014 (1R15) (Cont.)	VT-1 (Cont.)	Tack welds (AS-2) were re-inspected on all setscrews. The shroud side setscrews of JP08, JP12, JP14, JP17, and JP19 had no change in condition, except JP01 SS has two small indications. JP13 SS and JP16 VS setscrews also now have one of two tack welds cracked. All were evaluated as acceptable.
		VT-3	All 20 Slip Joint Clamps (SJC) were inspected. New minor wear was reported on JP09 SJC. No contact was reported on JP11 and JP14 middle guide vane in 1R15. There were no changes in existing wear on JP11, JP17, and JP19. All conditions were evaluated as acceptable. Aux Wedges on JP7 Vessel Side (VS), JP13 Shroud Side (SS), JP13 VS, JP14 SS, and JP15 VS were inspected with no indications. JP14 VS Aux Wedge was inspected with minor wear into the restrainer bracket reported. This wear was evaluated as acceptable; no repair required.
	2016 (1R16)	EVT-1	EVT-1 performed on IN-4, RS-1, RS-2, RS-8, and RS-9 welds of JP13 and JP14. Also, an EVT-1 was performed on JP17/18 riser brace leaf welds RB-1 (a thru d) and RB-2 (a thru d), JP19/20 riser welds (RS-8 and RS-9), and JP11/12 riser weld (RS-3). No new indications identified. One previously identified indication (JP13/14 RS-9) was reexamined by EVT-1 and no change identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2016 (1R16) (Cont.)	VT-1	VT-1 examined all twenty main wedges (WD-1). Previous wedge wear identified on JP9, JP13, JP18, JP19, and JP20 had no change in condition reported. The main wedge and rod on JP9 was replaced with a thicker style wedge which restored the out of travel condition to acceptable. New and/or additional rod wear was identified on JP3, JP4, JP7, and JP11. Previously identified rod wear on JP2, JP8, JP9, JP10, JP14, JP15, JP17, JP18, JP19, and JP20 had no change in condition reported. Set screw gaps (AS-1) were inspected at all locations not repaired by Aux Wedge. Gaps were identified on VS setscrews of JP1 (0.008), JP3 (0.004), JP4 (0.013), JP5 (0.008), JP6 (0.010), JP9 (0.011), JP11 (0.014), JP17 (0.010), and JP18 (0.004). These gaps were acceptable without the need for repair. JP2 vessel side aux wedge was removed during 1R16 and a 0.013" gap remained at this location after the main wedge was tapped. Tack welds (AS-2) were re-inspected on all setscrews. The shroud side setscrews of JP1, JP8, JP12, JP13, JP14, JP17, and JP19 had no change in condition. The vessel side setscrew on JP16 also had no change in condition. One new indication was identified on JP20 shroud side setscrew where one of two tack welds was cracked. All conditions were evaluated as acceptable.
		VT-3	5 Slip Joint Clamps (SJC) with previous indications were re-inspected. New minor wear was reported on JP11 and JP17 SJC. Contact was reported on JP14 middle guide vane in 1R16. There were no changes in existing wear on JP09 and JP19. All conditions were evaluated as acceptable. 4 Aux Wedges on Shroud Side (SS) and Vessel Side (VS) of JP19 and JP20 were inspected with no indications. JP14 VS Aux Wedge was found to have additional minor wear into the restrainer bracket. This wear was evaluated as acceptable; no repair required. JP02 VS Aux Wedge was found to be significantly over traveled and worn into the setscrew underneath. This Aux Wedge was removed during 1R16 and a 0.013" gap remained at this location after the main wedge was tapped.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2018 (1R17)	EVT-1	EVT-1 performed on JP02 DF-2, JP05 IN-4, JP03/04 riser brace leaf welds RB-1 (a thru d) and RB-2 (a thru d), and JP09/10 riser brace leaf welds RB-1 (a thru d). EVT-1 performed on RS-8 and RS-9 welds on JP03/04 and JP09/10 risers. EVT-1 performed on RS-6 and RS-7 on JP09/10 and JP13/14 risers. EVT-1 performed on RS-3 welds on JP13/14, JP15/16, and JP17/18. EVT-1 performed on AD-1, AD-2, DF-1, DF-2, and MX-2 welds on JP13 and JP14. One previously identified indication (JP13/14 RS-9) was reexamined by EVT-1 and no change identified. No other indications were identified.
		VT-1	VT-1 examined all twenty main wedges (WD-1). Previous wedge wear identified on JP18, JP19, and JP20 had no change in condition reported. JP 13 noted new wear on the top side of the wedge, which was previously not reported but seen in Li1R16. New slight wedge wear was reported on JP9 and JP10. Scope was expanded as required. New wedge rod wear was identified on one or more sides of JP06, 09, 12, 13, 14 and 16. Previously identified rod wear on JP02, 03, 04, 07, 11, 15, 17, 18, 19 and 20 had no change in condition reported. Set screw gaps (AS-1) were inspected at all locations not repaired by Aux Wedge. Gaps were identified on VS setscrews of JP1 (0.020), JP2 (0.019), JP3 (0.005), JP4 (0.022), JP5 (0.008), JP6 (0.010), JP9 (0.014), JP11 (0.020), JP12 (0.004), JP17 (0.008), and JP18 (0.004). Gaps less than 0.015" were acceptable without the need for repair. Gaps greater than 0.015" were reduced by tapping the main wedge. As-left gaps post-tap were JP01 (0.008), JP02 (0.013), JP04 (0.010), and JP11 (0.013). Tack welds (AS-2) were re-inspected on all setscrews. The shroud side setscrews of JP01, 08, 12, 13, 14, 16, 17, 19, and 20 had no change in condition. Two previously unreported indications on JP 09 were identified on the SS tack welds. All conditions were evaluated as acceptable.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2018 (1R17) (Cont.)	VT-3	All 20 Slip Joint Clamps (SJC) were adjusted to increase the preload. All were inspected before and after the increase. New minor wear was reported on JP13, 14, and 20 SJC. No changes in existing wear on JP09, 11, 17, and 19. Aux Wedges on JP14 Vessel Side (VS) was inspected with no change in previous condition, and JP18 Shroud Side (SS) was inspected with no indications. All conditions were evaluated as acceptable.
Jet Pump Beams	1994 (1R05)	UT	UT baseline of replacement hold-down beams. No indications identified.
	2004 (1R10)	UT	UT examined BB-1, BB-2, and BB-3 of all 20 jet pump hold down beams. One indication identified in BB-2 region of JP04. This beam was changed out during the same refuel outage with a Group 3 style beam. No other indications identified.
	2006 (1R11)	VT-3	VT-3 examined BB-1, BB-2, and BB-3 on replacement beam for JP04. No indications identified.
	2008 (1R12)	UT & EVT-1	UT examined BB-1, BB-2, and BB-3 of all jet pump hold down beams with the exception of JP04 (Group 3) beam that was installed in 2004. One indication was identified in the BB-3 region of JP01 beam. A supplemental visual exam (EVT-1) was performed and surface discontinuities were noted that could explain the UT indication. The UT indication was determined to be non-relevant and the beam was not replaced. One indication was identified in the BB-2 region of the JP08 beam. A supplemental visual exam (EVT-1) could not confirm the presence of any surface discontinuities that would explain the indication; therefore, this beam was replaced during the same refuel outage with a Group 3 style beam.
	2010 (1R13)	EVT-1	Re-inspected indication on JP01 BB-3 region. Re-confirmed surface discontinuity. No change identified.
		VT-1 & VT-3	Visually examined JP08 beam after one cycle of service. No indications were identified.
	2012 (1R14)	VT-1/VT-3	Re-inspected indication on JP01 BB-3 region. Re-confirmed surface discontinuity. No change identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Beams (Cont.)	2014 (1R15)	UT & EVT-1	UT examined BB-1, BB-2, and BB-3 of all jet pump hold down beams with the exception of JP04 (Group 3 installed in 2004) and JP08 (Group 3 installed in 2008). Also, re-inspected surface discontinuity on JP01 BB-3 region. No indications identified and no change JP01 BB-3 condition or appearance.
	2016 (1R16)	EVT-1	Re-inspected the surface discontinuity on JP01 BB-3 by EVT-1 and no change identified.
	2018 (1R17)	EVT-1	Re-inspected the surface discontinuity on JP01 BB-3 by EVT-1 and no change identified.
Jet Pump Diffuser			See Jet Pump Assembly
CRD Guide Tube	1990 (1R03)	VT-3	VT-3 examination of replacement CRDs at core locations 10-23, 14-19, 14-23, 14-31, 18-43, 18-55, 22-11, 22-39, 22-47, 26-03, 26-11, 26-27, 30-23, 30-3530-55, 34-23, 34-37, 34-31, 34-39, 38-07, 38-23, 38-31, 38-35, 38-39, 42-19, 46-11, 46-39, and 54-31. No indications identified.
	1992 (1R04)	VT-3	VT-3 examination of control rod assembly at core locations 30-11,22-55, 54-23, 38-07, 38-55, and 22-07. No indications identified.
	1994 (1R05)	VT-3	VT-3 examination of replacement CRDs at core locations 02-43, 10-19, 10-39, 14-39, 18-23, 18-39, 20-35, 26-27, 26-31, 30-47, 34-31, 34-47, 38-19, 38-35, 38-41, 42-15, 42-55, 50-43, 54-19, and 58-31. No indications identified.
	1998 (1R07)	VT-3	VT-3 of CRDs at core loc. 54-49, 48-55,50-51, 42-59, 30-31, 30-34, 34-35, 26-31, 34-31, 26-27, 30-27, and 34-27. No indications identified.
	2000 (1R08)	EVT-1 & VT-3	Examined CRGT-1,2,3 and FS/GT-ARPIN-1 at core locations 30-55, 38-31 and 38-39. No indications identified.
	2004 (1R10)	EVT-1 & VT-3	Examined CRGT-1,2,3 and FS/GT-ARPIN-1 at 10-39, 18-27, 18-35, 26-43, 30-15, 30-47, 34-15, 34-19, 34-43, and 46-11. No indications identified.

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Plant: Limerick Generating Station, Unit 1

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
CRD Guide Tube (Cont.)	2008 (1R12)	EVT-1 & VT-3	Examined CRGT-2 and CRGT-3 at 14-15, 14-51, 18-43, 18-55, 30-31, 34-35, 38-19, 42-23, and 42-27. The integrity of the CRGT-1 and FS/GT-ARPIN-1 at each core location identified above was verified via the cell disassembly / reassembly procedure (M-C-741-301) as allowed by BWRVIP-47-A. No indications identified.
CRD Stub Tube	1992 (1R04)	VT-2	VT-2 examination from vessel exterior on 100% of penetrations once per interval, in excess of Section XI. No indications identified.
	1996 (1R06)	VT-2	VT-2 examination from vessel exterior on 100% of penetrations. No indications identified.
	1998 (1R07)	VT-3	VT-3 of tube to housing and tube to RPV weld at core loc. 54-49, 48-55,50-51, 42-59, 30-31, 30-34, 34-35, 26-31, 34-31, 26-27, 30-27, and 34-27. No indications identified.
	2000 (1R08)	VT-2	VT-2 examination from vessel exterior on 100% of penetrations. No indications identified.
	2006 (1R11)	VT-2	VT-2 examination from vessel exterior on 100% of penetrations. No indications identified.
	2010 (1R13)	Best Effort VT-1 and VT-3	Visually examined CRDH/ST-1 and CRST/RPV-1 welds at core locations 22-31, 26-27, 26-31, 26-35, 30-23, 30-27, 30-31, and 34-27 due to control rod guide tube removal in support of bottom head drain cleaning. No indications were identified.
In-Core Housing	1992 (1R04)	VT-2	VT-2 examination from vessel exterior on 100% of penetrations once per interval, in excess of Section XI. No indications identified.
	1996 (1R06)	VT-2	VT-2 examination from vessel exterior on 100% of penetrations. No indications identified.
	1998 (1R07)	VT-3	VT-3 of housing and weld to RPV at core loc. 48-53, 32-29, 24-29, 24-33, and 32-33. No indications identified.
	2006 (1R11)	VT-2	VT-2 examination from vessel exterior on 100% of penetrations. No indications identified.

Reactor Internals Inspection History

Plant: Limerick Generating Station, Unit 1

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
In-Core Housing (Cont.)	2010 (1R13)	Best Effort VT-1 and VT-3	Visually examined ICH/RPV-1 and ICHS-1 welds at core locations 24-29, 24-33, 32-25, and 32-29. Visually examined ICHS/ICGT-1 welds at core locations 24-33 and 32-25. These locations were examined due to control rod guide tube removal in support of bottom head drain cleaning. No indications were identified.
Dry Tube	1989 (1R02)	VT-3	VT-3 examination of accessible portions of dry tubes at core locations 16-45, 40-45, 40-21, 16-21, (SRM's), 16-53, 48-53, 24-37, 32-37, 32-29, 24-29, 48-13, and 16-13 (IRM's). No indications identified.
	1992 (1R04)	VT-1	VT-1 examination of 4 dry tubes. No indications identified.
	1994 (1R05)	VT-1	VT-1 examination of dry tubes at core locations: 24-37 (IRM), and 40-21 and 38-23 (SRM). No indications identified.
	2004 (1R10)	VT-1	Examined SRMs at 16-45 and 40-21 and IRMs at 24-29, 24-37, 32-37 and 48-13. Dry tube 24-29 identified as not fully engaged with the top guide. No other indications identified.
	2006 (1R11)	N/A	Replaced dry tubes SRMs 16-21 and 40-45 and IRMs 24-29, 24-37, 48-13, and 48-53 with new universal style dry tube and shuttle tube.
	2008 (1R12)	N/A	Replaced dry tubes SRMs 16-45 and 40-21 and IRMs 16-13, 16-53, 32-29, and 32-37 with new universal style dry tube and shuttle tube.
Instrument Penetrations	1990 (1R03)	VT-3	VT-3 examination of interior attachment of instrument nozzles N16A through D, N12A through D, and N11 A & B. No indications identified. PT examination performed on all instrument nozzle to safe end welds once per interval, per Section XI (includes N10 Core Differential Pressure penetration). No indications identified.
	1996 (1R06)	VT-2	VT-2 examination from vessel exterior on 100% of penetrations once per interval, in excess of Section XI. No indications identified.
	2006 (1R11)	VT-2	VT-2 examination from vessel exterior once per interval. No indications identified.

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Plant: Limerick Generating Station, Unit 1

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Instrument Penetrations (Cont.)	2008 (1R12)	VT-2	VT-2 examinations of instrument nozzles N11A-B, N12A-D, and N16A-D were performed during the Class 1 system leakage test.
	2010 (1R13)	VT-2	VT-2 examinations of instrument nozzles N11A-B, N12A-D, and N16A-D were performed during the Class 1 system leakage test.
	2012 (1R14)	VT-2	VT-2 examinations of instrument nozzles N11A-B, N12A-D, and N16A-D were performed during the Class 1 system leakage test.
	2014 (1R15)	VT-2	VT-2 examinations of instrument nozzles N11A-B, N12A-D, and N16A-D were performed during the Class 1 system leakage test.
	2016 (1R16)	VT-2	VT-2 examinations of instrument nozzles N11A-B, N12A-D, and N16A-D were performed during the Class 1 system leakage test.
	2018 (1R17)	Bare-metal VT-2	Insulation was removed and bare metal VT-2 examinations were performed on instrument nozzles N11A-B, N12A-D, and N16A-D during the initial shutdown for the outage and during the Class 1 system leakage test at the end of the outage. This action was required as part of the extent of condition from the Unit 2 N16D instrument nozzle leakage in 2017.
Vessel ID Attachment Welds	1987 (1R01) to 1996 (1R06)	VT-1 & VT-3	VT-1 or VT-3 performed on all ID attachment welds once per interval per Section XI. No indications identified.
	1998 (1R07)	MVT-1 / CSVT-1	Examinations include 4 steam dryer support brackets, 5 jet pump riser brace support pads on JP 1 through 10, and 8 core spray support bracket welds. No indications identified.
		VT-1	VT-1 examined 2 surveillance sample holder attachment welds (30 deg and 120 deg). No indications identified.
		VT-3	VT-3 examined one Guide Rod bracket attachment weld at 0 degrees. No indications identified.
	2000 (1R08)	EVT-1	EVT-1 examination of two Core Spray Piping Brackets at 15 degrees and 85.5 degrees. No indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Vessel ID Attachment Welds (Cont.)	2000 (1R08) (Cont.)	VT-3	VT-3 examined one Guide Rod bracket attachment weld at 180 degrees. No indications identified.
	2002 (1R09)	EVT-1	EVT-1 examination of Jet Pump Riser Brace Support Pads on JP15/16 and JP17/18, Feedwater Sparger End Brackets at 5°, 55°, 65° and 115°, and Steam Dryer support lugs at 4° and 94°, and Core Spray Brackets at 112.5° and 165°. No indications identified.
	2004 (1R10)	EVT-1	EVT-1 examination of Jet Pump Riser Brace Support Pads on JP1/2, JP3/4, JP7/8 and JP19/20, Feedwater Sparger End Brackets at 125°, 175°, 185° and 235°, Steam Dryer support lug at 184°, and Core Spray Brackets at 195° and 247.5°. No indications identified.
	2006 (1R11)	EVT-1	EVT-1 examination of Jet Pump Riser Brace Support Pads on JP5/6, JP9/10, JP11/12 and JP13/14, Feedwater Sparger End Brackets at 245°, 295°, 305° and 355 °, Steam Dryer support lug at 274°, and Core Spray Brackets at 274.5° and 345°. No indications identified.
		VT-1	VT-1 examined attachment welds of one surveillance sample holder at 300°. No indications identified.
		VT-3	VT-3 examined both Guide Rod attachment welds at 0° and 180°. No indications identified.
	2008 (1R12)	EVT-1	EVT-1 examination of Jet Pump Riser Brace Support Pads (RBSP) on JP1/2 and JP19/20, Feedwater Sparger End Brackets (FWSB) at 5°, 55°, and 65°, and Core Spray Brackets (CSB) at 15° and 85.5°. No indications identified. EVT-1 examined the Steam Dryer support bracket attachment weld at 4° and identified a minor wear mark on the top surface of the bracket itself. When compared to previous inspection video, there was no change in condition. The attachment weld had no indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Vessel ID Attachment Welds (Cont.)	2010 (1R13)	EVT-1 & VT-3	EVT-1 examined the Core Spray Bracket (CSB) attachment welds at 112.5° and 165° and Steam Dryer Support Bracket (SDSB) attachment weld at 94°. VT-3 examined the top surface only of the Steam Dryer Support Brackets at 4°, 94°, 184°, and 274°. No indications were identified in the attachment welds; however, all SDSBs were found to have various levels of wear identified on the top surface of the brackets. These indications were evaluated as acceptable with no repair required.
	2012 (1R14)	EVT-1	EVT-1 examination of Jet Pump Riser Brace Support Pads (RBSP) on JP17/18, Feedwater Sparger End Brackets (FWSB) at 115°, 125°, 175°, 185°, and 235°, Core Spray Brackets (CSB) at 195° and 247.5°, and Steam Dryer Support Bracket at 184°. No indications identified.
		VT-1	VT-1 examined lower attachment weld on Surveillance Specimen Holder bracket at 30° and 120°. No indications identified.
		VT-3	VT-3 examined upper attachment weld on Surveillance Specimen Holder bracket at 30° and 120°. No indications identified. VT-3 examined the top surface only of the Steam Dryer Support Brackets at 4°, 94°, 184°, and 274°. Reinspection of previously noted indications identified minor changes in wear. These indications were evaluated as acceptable with no repair required.
	2014 (1R15)	EVT-1	EVT-1 examination of Jet Pump Riser Brace Support Pads (RBSP) on JP7/8 and JP15/16, Feedwater Sparger End Brackets (FWSB) at 245° and 295°, Core Spray Brackets (CSB) at 274.5° and 345°, and Steam Dryer Support Bracket (SDSB) at 274°. No indications identified on any vessel attachment welds.
		VT-3	VT-3 examined the top surface only of the Steam Dryer Support Brackets at 4°, 94°, 184°, and 274°. Reinspection of previously noted indications identified some increased wear when compared to the previous inspection in 1R14; most notably on the 94° lug. These indications were evaluated as acceptable for another cycle with no repair required.

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Plant: Limerick Generating Station, Unit 1

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Vessel ID Attachment Welds (Cont.)	2016 (1R16)	EVT-1	EVT-1 examined the Feedwater Sparger End Brackets (FWSB) at 305° and 355°, Steam Dryer Support Bracket (SDSB) at 184°, and Core Spray Brackets (CSB) at 15° and 85.5°. No indications identified.
		VT-1	VT-1 examined the lower attachment weld on Surveillance Specimen Holder bracket at 300° azimuth. No indications identified.
		VT-3	VT-3 examined both Guide Rod attachment welds at 0° and 180° and the upper attachment weld on the 300° Surveillance Specimen Holder bracket. No indications identified.
			VT-3 examined the top surface only of the Steam Dryer Support Brackets at 4°, 94°, 184°, and 274°. Increased wear was identified on the top surface of the 94° lug. Consequently, the damaged area on the 94° lug was removed by Electro-Discharge Machining (EDM) and a custom shim was welded to the underside of the steam dryer support ring at the matching 94° seismic block location.
	2018 (1R17)	EVT-1	EVT-1 examined the Jet Pump Riser Brace Support Pads (RBSP) on JP3/4, Feedwater Sparger End Brackets (FWSB) at 5°, 55° and 65°, Steam Dryer Support Brackets (SDSB) at 4°, 94°, 184° and 274°, and Core Spray Brackets (CSB) at 112.5° and 165°. No indications identified.
		VT-3	VT-3 examined the top surface only of the Steam Dryer Support Brackets at 4°, 94°, 184°, and 274°. New wear pattern identified one cycle after EDM repair of 94° lug and custom shim installation. Evaluated as acceptable.
LPCI Coupling	1987 (1R01), 1990 (1R03), &1994(1R05)	VT-3	VT-3 examination of all 4 couplings. No indications identified.
	1998 (1R07)	MVT-1	All of N-17A and B. No indications identified.
	2000 (1R08)	EVT-1, VT-1, & VT-3	All of N-17C and D. No indications identified.
	2002 (1R09)	EVT-1 & VT-3	N17A, locations 45-3b, 6a, 6b, 6c and 6d. No indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
LPCI Coupling (Cont.)	2004 (1R10)	EVT-1, VT-1, & VT-3	N17A, locations 45-8a, 8b, 8c, 8d and 12 and all of N17B. No indications identified.
	2008 (1R12)	EVT-1, VT-1, & VT-3	All of N17C and N17D were examined. No indications identified. Due to new angle and distance requirements for visual exams in accordance with BWRVIP-03 Revision 10, the 45-12 (Sleeve Flange to Thermal Sleeve) welds on both LPCI couplings were performed as best effort EVT-1 exams.
	2012 (1R14)	EVT-1, VT-1, & VT-3	All of N17A and N17B were examined, including 45-03b, 45-06a thru 06d, 45-08a thru 08d, and 45-12 welds. No indications identified.
	2014 (1R15)	EVT-1, VT-1, & VT-3	All of N17C welds were examined, including 45-03b, 45-06a thru 06d, 45-08a thru 08d, and 45-12 welds. No indications identified.
	2016 (1R16)	EVT-1, VT-1, & VT-3	All of N17D welds were examined, including 45-03b, 45-06a thru 06d, 45-08a thru 08d, and 45-12 welds. No indications identified.
	2018 (1R17)	EVT-1, VT-1, & VT-3	All of N17A welds were examined, including 45-03b, 45-06a thru 06d, 45-08a thru 08d, and 45-12 welds. No indications identified.
Steam Dryer	1998 (1R07)	VT-1 & VT-3	VT-1 examined the steam dryer drain channel welds. No indications identified. VT-3 examined the overall condition of the steam dryer. No indications identified.
	2000 (1R08)	VT-1	VT-1 examined the steam dryer drain channel welds. No indications identified.
	2002 (1R09)	VT-1 & VT-3	VT-1 examined the steam dryer drain channel welds. Stain identified on drain channel SDDC4c. No other indications identified. VT-3 examined the overall condition of the steam dryer. No indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer (cont.)	2004 (1R10)	VT-1 & VT-3	VT-1 examined cover plate welds, outer bank hood seam welds, drain channel welds, and previous support ring indications. One support ring bolt was found with old mechanical deformation/damage and left as-is. Minor IGSCC previously identified on the support ring. No other indications identified. VT-3 examined steam dryer tie bars. During examination of tie bars, one cam nut was found to be protruding from end bank number 6. This cam nut was staked during the same outage.
	2006 (1R11)	VT-1	Performed BWRVIP-139 inspections of cover plates SDCP 1a-b and 7a-b, top and bottom hood SDBH 1a-b, 2a-b, 3a-b, 4a-b, 5a-b, and 6a-b, end bank welds SDEB 1a-d and 2a-d, lifting lugs, support ring and cam nut tack welds. Minor IGSCC identified on the support ring and tack weld cracking on cam nuts. No other indications identified.
	2008 (1R12)	VT-1	VT-1 examined cover plates (SDCP1a-b, SDCP7a-b), hood seam welds (SDHS1a-d, SDHS2a-e, SDHS3a-e, SDHS4a-e, SDHS5a-e, SDHS6a-d), lifting rod eye welds (SDLRALE, SDLRBLE, SDLRCLE, SDLRDLE), plenum partitions (SDPP2a-b, SDPP3a-b, SDPP4a-b, SDPP5a-b), and all 37 tie bars (SDTB01-SDTB37). Minor IGSCC indication re-examined on support ring in area of SDCP7b. No change in condition. IGSCC indication identified on SDHS4d at the top of the hood seam weld. Indication is approximately 1.5 inches in length and was evaluated as acceptable. No repair required. Indications identified on 11 cam nuts (SDCN). All were evaluated as acceptable. No repairs required.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer (cont.)	2010 (1R13)	VT-3 & VT-1	VT-3 examined the overall condition of the steam dryer. No indications identified. VT-1 examined all Steam Dryer Cam Nut (SDCN) locations, including areas of previously identified indications. From this inspection, indications were noted on 13 of 48 cam nuts. All flaws were evaluated as acceptable with no repairs required. VT-1 examined the Steam Dryer Support Ring (SDSR), including areas of previously identified indications and the seismic blocks at 4°, 94°, 184°, and 274°. A few new IGSCC indications were noted with no change to the existing indications on the support ring. Minor wear and rub marks were identified on the underside of the seismic blocks at all locations. All flaws were evaluated as acceptable. VT-1 examined the previous indication identified at the SDHS4d location (at the top of the hood seam weld). No change in condition was noted.
	2012 (1R14)	VT-1-89	VT-1 examined all Steam Dryer Cam Nut (SDCN) locations, including areas of previously identified indications. From this inspection, indications were noted on 20 of 48 cam nuts. All flaws were evaluated as acceptable with no repairs required. VT-1 examined bottom hood horizontal welds (SDBH1a-b, SDBH6a-b), drain channel welds (SDDC3a-c), end bank welds (SDEB1a-d, SDEB6a-d), hood seam welds (SDHS1a-d, SDHS2a-e, SDHS4a-e, SDHS6a-d), lifting rod tack welds (SDLRDTW), man way welds (SDMWa-d), plenum partitions (SDPP2a-b, SDPP3a-b, SDPP4a-b), and top horizontal weld (SDTH1). Minor IGSCC indication re-examined on SDHS4d. No change in condition. Re-examined cracked tack weld on SDLRDTW with no changes noted. No other indications identified.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer (cont.)	2014 (1R15)	VT-1-89	VT-1 examined bottom hood horizontal welds (SDBH2a-b, SDBH5a-b), end bank welds (SDEB2a-d, SDEB4a-d), guide bracket (SDGB 0 Az), and plenum partition welds (SDPP5a-b). No indications identified. VT-1 examined all Steam Dryer Cam Nut (SDCN) locations, including areas of previously identified indications. Indications were noted on 20 of 48 cam nuts with only minor changes. Minor IGSCC indications were re-examined on a hood seam weld (SDHS4d) and the support ring (SDSR). No change in condition. A cracked tack weld on a lifting lug (SDLRDTW) was re-examined with no changes noted. All flaws were evaluated as acceptable with no repairs required.
	2016 (1R16)	VT-1-89	VT-1 examined cover plate welds (SDCP1a-b), end bank welds (SDEB3a-d, SDEB5a-d), hood seam welds (SDHS3a-e, SDHS5b-d), "D" lifting rod welds (SDLRD1a-c, SDLRDTW), and top horizontal weld (SDTH6). The tack weld indication at SDLRDTW was re-examined with no changes noted. The underside of the 94° steam dryer seismic block was re-examined and additional wear was identified. A custom shim was welded into this location as part of the repair to the vessel support lug at this location. No other indications identified.
	2018 (1R17)	VT-1-89	VT-1 examined cover plate welds (SDCP7a-b), hood seam welds (SDHS5a and SDHS5e), 'D' lifting rod welds (SDLRD2a-b, 3a-b, 4a-b, CP, and LE), support ring (SDSR), and tie bars (SDTB01-37). Minor IGSCC indications were re-examined on the support ring (SDSR) with no change in condition reported. A cracked tack weld on a lifting lug (SDLRDTW) was re-examined, also with no changes noted. VT-1 examined all Steam Dryer Cam Nut (SDCN) locations, including areas of previously identified indications. Indications were noted on 20 of 48 cam nuts with no changes. All flaws were evaluated as acceptable with no repairs required.

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Access Hole Covers	1987 (1R01), 1990 (1R03), &1994(1R05)	VT-3	VT-3 examination of both access hole covers and welds at 0° and 180°. No indications identified.
	1998 (1R07)	VT-3	VT-3 examination of both access hole covers and welds at 0° and 180°. No indications identified.
	2004 (1R10)	EVT-1, VT-1	EVT-1 and VT-1 examination of both access hole cover welds at 0° and 180°. No indications identified.
	2008 (1R12)	VT-1	VT-1 examined all access hole cover welds at 0° and 180°. No indications identified.
	2012 (1R14)	EVT-1	EVT-1 exam performed on all welds on both access hole covers at 0° (1 weld) and 180° (3 welds). No indications identified.
	2018 (1R17)	EVT-1	EVT-1 exam performed on all welds on both access hole covers at 0° (1 weld) and 180° (3 welds). No indications identified.
DM Welds-BWRVIP-75-A Category A	2008 (1R12)	UT	1 weld inspected (DCA-318-1 FW1): 1 automated, no flaws, no repairs
DM Welds-BWRVIP-75-A Category C	2006 (1R11)	UT	3 welds inspected (DCA-318-3 N17C, RC 012, and RC 013): 1 weld with 82/182, 3 manual, no flaws, no repairs
	2008 (1R12)	UT	5 welds inspected (VRR-1RD-1B N2A, DCA-318-1 N17B, DCA-319-1 N5A, DCA-320-1 N5B, and RPV-1IN N9): 5 weld with 82/182, 1 manual, 4 automated, no flaws, no repairs
	2010 (1R13)	UT	5 welds inspected (VRR-1RS-1B N1B, VRR-1RD-1B N2D, VRR-1RD-1B N2E, VRR-1RD-1A N2G, and VRR-1RD-1A N2J): 5 welds with 82/182, 5 automated, no flaws, no repairs
	2012 (1R14)	UT	5 welds inspected (DCA-318-4 N17D, RPV-1IN N8A, VRR-1RS-1A N1A, VRR-1RD-1B N2B, VRR-1RD-1A N2F): 5 welds with 82/182, 5 manual phased array, no flaws, no repairs
	2014 (1R15)	UT	4 welds inspected (DCA-318-2 N17A, VRR-1RD-1B N2C, VRR-1RD-1A N2K, RPV-1IN N8B): 4 welds with 82/182, 3 automated, no flaws, no repairs

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Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
DM Welds-BWRVIP-75-A Category C (Cont.)	2018 (1R17)	UT	1 weld inspected (VRR-1RD-1A N2G): 1 weld with 82/182, 1 manual phased array, no flaws, no repairs
DM Welds-BWRVIP-75-A Category E	2010 (1R13)	UT	1 weld inspected (VRR-1RD-1A N2H): known indication mitigated with MSIP in 1992, first PDI examination, indication acceptable for continued service
	2014 (1R15)	UT	1 weld inspected (VRR-1RD-1A N2H) automated: known indication mitigated with MSIP in 1992, indication acceptable for continued service

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Plant: Nine Mile Point Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	RF16 (4/18)	UT	Performed two-sided UT on H1 thru H8. All recorded indications evaluated and compared to previously recorded indications. Off-Axis two-side UT performed on H4 from approximately 110 degrees to 133 degrees. Performed two-sided UT on V4, V5, V12, V13, V13, V14, V15, V16, V17, V24 and V25. One indication (0.99 inches in length) was identified on V4 which was evaluated as acceptable.
	RF15 (4/16)	EVT-1	Performed examinations to identify and characterize atypical cracking often referred to as off-axis indications and plan for UT inspections scheduled for N2R16. Sample areas on H4, H6, V12, V14 and V16
	RF14 (4/14)		No examinations performed
	RF13 (4/12)		No examinations performed
	RF12 (4/10)	UT	Performed two sided UT on all shroud vertical welds V4, V5, V12 through V17, V24 and V25. Achieved greater than 50% coverage. No indications observed.
	RF11 (3/08)	UT	Reinspection (2008): Performed and obtained limited two sided UT coverage on H1 thru H8. All recorded indications evaluated and compared to previously recorded indications.

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Plant: Nine Mile Point Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud (Continued)	RF11 (3/08)	EVT-1	Performed supplemental single sided visual (EVT-1) examination at the intersection of H4 and H5 and vertical welds V4, V5 and V12-17. 12" of weld metal was inspected above and below the horizontal welds from the OD of the shroud. No indications noted.
	RF10 (3/06)		No inspections required
	RF09 (3/04)	UT	Re-examination of H4, H5 with no significant growth noted. Completed two sided coverage of H6A & H6B (phased array on ring side of H6B) no flaws noted in ring and no growth noted on lower side of H6B.
	RF08 (3/02)	EVT-1	Visual exam of V24 & V25 OD only, no indications noted
	RF07 (3/00)	UT	RF07 (3/00) Performed UT exams of H4 & H5 only. Crack growth was within established limits.
	RF06 (5-98)	UT	RF06 (5-98) - Base line UT exams performed. Welds H1 through H7 inspected with indications observed in all but weld H6. Indications varied from approximately 2% to 85% of length inspected with maximum depth of 0.65 inches. All indications acceptable for continued operation. Welds V12 through V17 inspected with no indications observed.
	RF03 (10/93)	VT	H1, H2, H7 OD H3, H4, H5 ID No reportable indications

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Plant: Nine Mile Point Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Shroud Support	RF16 (4/18)	EVT-1	Performed visual examination on the accessible top side surfaces of H9A and H9B (H8 & H9) No indications found
	RF15 (4/16)	EVT-1	Access Hole Covers at 0 and 180 degrees No indications found.
	RF14 (4/14)		No examinations performed
	RF13 (4/12)	EVT-1	Performed visual examination on the accessible top side surfaces of H9A and H9B (H8 & H9) No indications found
		EVT-1 VT-1/VT-3	Best effort EVT-1, VT-1 and VT-3 examination of 14 shroud support legs (H10, H11 and H12) through the disassembly of Jet Pumps 1-20. No indications found
	RF12(4/10)	EVT-1	Access Hole Covers at 0 and 180 degrees No indications found.
	RF11 (3/08)	EVT-1	Access Hole Covers at 0 degree No indications found.
		EVT-1	Shroud to baffle plate between JP20-JP1 No indications found.
	Mid-Cycle (11/07)	VT-1	Disassembly of JP11 provided access to H-10, H-11 and H-12 welds of the shroud support legs at 190 and 210 degrees. Approximately 20% coverage was obtained with VT-1 resolution. No indications found
	Mid-Cycle (11/07)	VT-1	Disassembly of JP11 provided access to the bottom side of H9A (H8) and H9B

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			(H9) welds at 202 degrees. Approximately 5.5% coverage was obtained with VT-1 resolution. No indications found
	RF10 (3/06)	EVT-1	H9 weld inspections performed between JP sets and one Access Hole cover plate examined (top hat design) examined. No indications found.
	RF09 (3/04)	UT	Obtained 100% coverage of H9 from vessel side, a single ½" long original construction flaw was noted (not surface connected)
	RF08 (3/03)	EVT-1	Both access hole covers examined, no indications noted. (SIL 462, rev 1 exam)
	RF07	EVT-1	~25% of H9A & H9B
	RF06 (5-98)		RF06 (5-98) - No Inspections Performed
	RF04 (5/95)	VT-3	The shroud support access hole cover welds were found to be free of radial cracking.
Core Spray Piping	RF16 (4/18)		No examinations performed.
	RF15 (4/16)	EVT-1	Performed examination on scheduled welds P1, P2, P3, P4, P5, P6, P7, P8a and P8b. No indications found
		EVT-1	Piping bracket welds at 195, 265, 290 and 345 degrees. No indications found.
	RF14 (4/14)	EVT-1	Performed examination on scheduled welds P2, P3, P4, P5, P6, P7, P8a and

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping (Continued)			P8b. No indications found
		EVT-1	Piping bracket welds at 15, 70, 95 and 165 degrees. No indications found.
	RF13 (4/12)	EVT-1	Performed examination on scheduled welds P2, P3, P5, P6, P7, P8a and P8b. No indications found
	RF12(4/10)	EVT-1	P2 piping T-Box cover plate welds at 120 and 240 degrees. No indications found.
		EVT-1	P3 piping to T-Box welds at 120 and 240 degrees. No indications found.
		EVT-1	P4a Piping to upper elbow weld and P4b upper elbow to downcomer weld at 350 degrees. No indications found.
		EVT-1	P5, P6 and P7 welds on all four downcomers at 10, 170, 190, and 350 degrees. No indications found.
		EVT-1	P8a pipe to thermal sleeve weld and P8b thermal sleeve to Shroud weld on all four downcomers at 10, 170, 190 and 350 degrees. No indications found.
		EVT-1	Piping bracket welds at 195, 265, 290 and 345 degrees. No indications found.
	RF11 (3/08)	EVT-1	P2 piping T-Box cover plate welds at 120 and 240 degrees. No indications found.
		EVT-1	P3 piping to T-Box welds at 120 and 240 degrees. No indications found.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping (Continued)		EVT-1	P4c downcomer to elbow welds and P4d elbow to pipe welds at 170 and 350 degrees. No indications found.
		EVT-1	P5, P6 and P7 welds on all four downcomers at 10, 170, 190, and 350 degrees. No indications found.
		EVT-1	P8a pipe to thermal sleeve weld and P8b thermal sleeve to Shroud weld on all four downcomers at 10, 170, 190 and 350 degrees. No indications found.
	RF10 (3/06)	EVT-1	Visual pick-up exams on 4 remaining target welds, P8a & P8b that were not UT examined last outage. No indications found.
	RF09 (3/04)	UT / EVT-1	Baseline UT, including both P1 welds, completed with no indications noted. Also other BWRVIP visual exams completed
	RF08 (3/02)	EVT-1	Inspections performed per BWRVIP guidelines. No indications found.
	RF07 (3/00)	VT	RF07 (3/00) – Per BWRVIP-guidelines, 100% of target welds and 25% of remaining welds. No indications found
	RF06, 1998	EVT-1	RF06 (5-98) - No Indications EVT-1 only
	RF04 (5/9) RF02 (3/92) RF01 (10/90)	VT	No indications

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger	RF16 (4/18)		No examinations performed
	RF15 (4/16)		No examinations performed
	RF14 (4/14)	VT-1	Performed examinations on scheduled C and D sparger brackets at 100, 130, 135, 140, 170, 190, 220, 225, 230 and 260 degrees. No indications found
	RF13 (4/12)	EVT-1	Performed examination on scheduled welds S1, S2 and S4. No indications found
		VT-1	Performed examination on scheduled drain welds S3c. No indications found
		VT-1	Performed examination on scheduled brackets at 10, 280, 310, 315, 320, 350, 40, 45, 50 and 80 degrees. No indications found
	RF12(4/10)	VT-1	S3a and S3b welds on C and D Sparger nozzles
		VT-1	Sparger Bracket to Shroud welds at 100, 130, 135, 140, 170, 190, 220, 225, 230,260 and 265 degrees. No indications found.
	RF11 (3/08)	EVT-1	S1 cover plate to T-Box welds at 10, 170, 190 and 350 degrees. No indications found.
		EVT-1	S2 T-Box to sparger pipe welds at 10, 170, 190 and 350 degrees. No indications found.
		VT-1	S3a and S3b welds on the A and B

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger (Continued)			Sparger nozzles. No indications found.
		VT-1	B and D Sparger drain welds at 260 and 280 degrees. No indications found.
		EVT-1	S4 end cap to Sparger pipe welds at 85, 95, 265 and 275 degrees. No indications found.
		VT-1	Sparger Bracket to Shroud welds at 10, 40, 45, 50, 80, 280, 310, 315, 320 and 350 degrees. No indications found.
	RF10 (3/06)	EVT-1 / VT-1	Inspections performed per BWRVIP guidelines. No indications found.
	RF09 (3/04)	EVT-1 / VT-1	Inspections performed per BWRVIP guidelines. No indications found.
	RF08 (3/02)	EVT-1 / VT-1	Inspections performed per BWRVIP guidelines. No indications found.
	RF07 (3/00)	VT	RF07 (3/00) Per BWRVIP guidelines - 1 sparger (welds S3a, S3b,S3c & brackets) No indications found
	RF06 (5-98)	VT	RF06 (5-98) - No Indications
	RF04 (5/95)	VT	EVT-1 & MVT
	RF02 (3/92)		
	RF01 (10/90)		No indications

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Top Guide (Grid Beam, etc.)	R16 (4/18)	EVT-1	Performed examination on the bottom 2" of four TG interior plates and the intersections of the gird beams near the slotted notch in 3 TG cells. One RI was identified in TG cell 26-39 which was evaluated as acceptable.
	RF15 (4/16)	EVT-1	Performed examination on the bottom 2" of four TG interior plates and the intersections of the gird beams near the slotted notch on 3 TG cells. No indications found
	RF14 (4/14)	EVT-1	Performed examination on the bottom 2" of four TG interior plates and the intersections of the gird beams near the slotted notch on 3 TG cells. No indications found
	RF13 (4/12)	VT-3	Performed examination on 4 hold-down clamps. No indications found
		EVT-1	Performed examination on the bottom 2" of all four TG interior plates and the intersections of the gird beams near the slotted notch on 3 TG cells. No indications found
		VT-3	Performed 100% scan of the Top Guide upper surface. No indications found
	RF12(4/10)	EVT-1	Examined 6 Top Guide Cells (Lower 25% of the vertical plate, bottom of plate and grid intersections) No indications found
	RF11 (3/08)	EVT-1	Examined one cell (Lower 25% of the vertical plate, bottom of plate and grid intersections) No indications found

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Top Guide (Grid Beam, etc.) (Continued)	RF10 (3/06)	VT-3	No inspections performed
	RF09 (3/04)	VT	No Inspections required
	RF08 (3/02)		Completed inspections of 3 holddown clamps. No indications found. (1 restricted coverage of 50% due to fuel)
	RF07 (3/00)	VT-3	Limited inspection on the 4 "C-clamps" Limited due to fuel cells not removed. Scheduled for RF08 to meet BWRVIP requirements
	RF06, 1998	VT-3	
	RF04 (5/95)		
	RF02 (3/92)		
	RF01 (10/90)		No indications
Core Plate (Rim hold down bolts, etc.)	RF16 (4/18)		No inspections performed
	RF15 (4/16)		No inspections performed
	RF14 (4/14)		No inspections performed
	RF13 (4/12)		No inspections performed
	RF12(4/10)		No inspections performed
	RF11 (3/08)		No inspections performed
	RF10 (3/06)		No inspections performed.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Plate (Rim hold down bolts, etc.) (Continued)	RF09 (3/04)		No Inspections Required
	RF08 (3/02)		Performed engineering evaluation to justify no inspections required in RF08
	RF07 (3/00)		No inspections performed Examine Bolt Locking Device per SIL 588R1
	RF06 (5-98)	VT-3	No Indications Core plate bolting & Core plate
SLC	RF16 (4/18)	VT-2	Performed inspection of N11 nozzle after flood-up to assess presence of leakage and during System Pressure Test, no leakage observed.
	RF15 (4/16)	VT-2	Performed inspection of N11 nozzle after flood-up to assess presence of leakage and during System Pressure Test, no leakage observed.
	RF14 (4/14)	VT-2	Performed inspection of N11 nozzle after flood-up to assess presence of leakage and during System Pressure Test, no leakage observed.
	RF13 (4/12)	VT-3	Best effort VT-3 performed on the SLC line stub tube to RPV, stub tube to pipe welds and piping shroud support attachment brackets. No indications found
		UT	Nozzle to Safe End DM weld 2RPV-KB34 (SIL571-N11) Performed 100% UT in accordance with ASME Section XI Appendix VIII. No

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
SLC (Continued)			indications associated with IGSCC noted, ID geometry and weld interface noise observed.
	RF12 (4/10)		No inspections performed
	RF11 (3/08)		No inspections required
	RF10 (3/06)		No inspections required
	RF09 (3/04)		N/A, NMP2 (injects boron through HPCS line)
	RF08 (3/02)	UT	UT of N11 safe-end to nozzle weld and accessible portions of adjacent base metal using PDI qualified technique. No indications found.
	RF07 (3/00)		No Inspections performed
	RF06 (5-98)		2RPV-KB34 provides core ΔP only Nozzle exams per ASME code No Inspections
	RF04 (5/95)	PT	Core plate ΔP only this unit 2RPV-KB34 No reportable indications

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly	RF16 (4/18)	VT-1	Inspection of 16 WD1 and MWHD locations. JPs 5, 6, 15 and 16 had AVS installed and no WD1 or MWHD exam was required.
		EVT-1	RB1a,b,c,d and RB2a,b,c,d welds inspected at 30, 90, and 120 degrees.
		EVT-1	RS1 inspections were performed at 210 and 240 degree locations. RS2 inspections were performed at 210 and 300 degree locations. RS3 inspections were performed at 30, 90, 210 and 240 degree locations. RS6 inspections were performed at 120, 150 and 240 degree locations. RS7 inspections were performed at 120, 150 and 240 degree locations. RS8 inspections were performed at 240 and 270 degree locations. RS9 inspections were performed at every riser. RS9 indications at the 240 and 270 degree locations showed no discernible changes and remain acceptable for continued operation.
		VT-3	JP Anti-Vibration Solution (AVS) installation inspections at JP 5, 6, 15 and 16. Inspections of Slip Joint Clamps were included with AVS installation inspections.
		VT-1	JP 06 Sensing line indication was reinspected with no discernible change noted.
		EVT-1	Visual inspection of plant Slip Joint Ring Forging welds at JP 1, 5, 9, 13 and 17.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Continued)	RF15 (4/16)	EVT-1	Performed examinations for 2015-100 Interim accelerated inspection for RS-9 at all JP riser locations. Performed scheduled welds RS1, RS2, RS7 , No new indications observed. Compared previously identified indications on RS1 240°, RS9 240° and RS9 270° - no changes noted from previous inspection data on RS1 240° and RS9 240 and 270°.
		VT-1	Examined sensing lines and stand-offs for Jet Pumps 2, 4, 6, 7, 9, 11, 13, 15, 17, and 19. Circumferential indication on the bottom side of the lower stand-off on JP6 remains unchanged. No other indications found
		VT-1	Examined WD1 on all Jet Pumps, minor wear noted on Jet Pump 6 wedge No other indications noted.
		VT-1	Examined hold down beam ratchet teeth for engagement on Jet Pumps 8 and 15. Both have partial engagement, no change from previous inspection. JP beams are Westinghouse Toshiba Design
		VT-3	Examined main wedge hold down (MWHD) mechanism on all Jet Pumps. Fretting wear noted at Mandrel to wedge interface, pinion gear teeth to mandrel on JP 4,5, 6,7, 15 and 16, use-as-is 1 cycle evaluation. JP 15 pinion gear was loose and removed. Main wedge hold-downs are Westinghouse Toshiba design
		VT-3	Examined Slip Joint Clamps installed in 2014 on all Jet Pumps after one

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Continued)			operating cycle. No indications noted.
	RF14 (4/14)	EVT-1	Performed examinations on scheduled welds RS1, RS6, RS7, RS8 and RS9. No new indications observed. Compared previously identified indications on RS1 240°, RS9 240° and RS9 270° - no changes noted from previous inspection data on RS1 240° and RS9 270°. Could not confirm the indication at RS9 240° therefore it is evaluated as nonrelevant.
		VT-1	Examined sensing lines and stand-offs for Jet Pumps 1, 3, 5, 6, 8, 10, 12, 14, 16, 18 and 20. Circumferential indication on the bottom side of the lower stand-off on JP6 remains unchanged. No other indications found
		VT-1	Examined WD1, AS-1 and AS-2 on all Jet Pumps, No indications noted.
		VT-3	Examined hold down beam ratchet teeth for engagement on all Jet Pumps. Ratchet teeth on JP 8 and 15 did not have full engagement, use-as-is evaluation. JP beams are Westinghouse Toshiba Design
		VT-3	Examined main wedge hold down (MWHD) mechanism on all Jet Pumps. Wear noted on pinion gear teeth on JP 4, 5, 6, 15, and 16, use-as-is evaluation. Main wedge hold-downs are Westinghouse Toshiba design
		VT-1	Examined MX-7 main wedge bracket welds as expanded scope on JP 15 and

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Continued)			16 pinion gear teeth wear, no indications found. Pre-emptive repair to dampen out abnormal vibration during single loop operation by installation of Slip Joint Clamps on all 20 Jet Pumps. JP mixers are Westinghouse Toshiba design
	RF13 (4/12)	EVT-1	Performed examinations on scheduled welds RS1, RS3, RS6, RS7, RS8, RS9, RB1 and RB2. No new indications observed. Compared previously identified indications on RS1 240°, RS9 240° and RS9 270° - no changes noted from previous inspection data.
		VT-1	Examined sensing lines and stand-offs for Jet Pumps 2 and 6. Circumferential indication on the bottom side of the lower stand-off on JP6 remains unchanged. No other indications found
		VT-3	Performed ASME VT-3 on Jet Pumps 1-20. No indications found Replaced all 20 Jet Pump inlet mixers and hold down beams, removed all previously installed slip joint clamps and aux. wedges. Post modification inspections were performed and will be used as the baseline going forward.
	RF12 (4/10)	VT-1/VT-3	Examined clamp assemblies on Jet Pumps 5, 6 and 19
		VT-1	Sensing lines and stand-offs for Jet Pumps 6, 18, 19 and 20

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Continued)			Circumferential indication on the bottom side of the lower stand-off on JP6 remains unchanged.
		VT-1	Examined WD-1 wedges on Jet Pumps 1, 3-8, 13 and 18-20.
		VT-1	Examined WD-2a,b wedge rods on Jet Pumps 1, 3-8, and 18-20.
		VT-1	Examined AS-1 and AS-2 on Jet Pumps 2, 4, 14-16, 19 and 20.
		EVT-1	Examined BB3 area on Jet Pump 10 - indication in that area remains unchanged.
		VT-3	Examined Jet Pump 13 auxiliary wedges No indications found
		EVT-1	Examined RS-1 welds on Jet Pump Risers at 30, 60, 90 and 240 degrees. Previous indication on 240 Riser remained unchanged and no new indications found.
		EVT-1	Examined RS-2 welds on Jet Pump Risers at 30, 60 and 90 degrees. No indications found
		EVT-1	Examined RS-3 welds on Jet Pump Risers at 30, 60, 90, 120, 150, 210, 240, 270, 300 and 330 degrees. No indications found.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Continued)		EVT-1	Examined RS-8 welds on Jet Pump Risers at 30, 90, 120, 210, 240, 270, 300 and 330 degrees. No indications found.
		EVT-1	Examined RS-9 welds on Jet Pump Risers at 240 and 270 degrees. Previous indications remain unchanged and no new indications found.
	RF11 (3/08)	EVT-1	Examined IN-1 & IN-2 welds for Jets Pumps 1-10. No indications found
		VT-1/VT-3	Examined clamp assemblies on jet Pumps 1-12, 13-18 and 20
		EVT-1	Vibration instrumentation at 30 and 90 degrees.
		VT-1	Sensing lines and stand-offs for Jet Pumps 1-10, 16 and 17 - Circumferential indication was found on the bottom side of the lower stand-off. Use-As-Is Disposition
		VT-1	Wedges (WD1) and Wedge Rods (2A/B) for Jet Pumps 2 and 9-17 - No change in previously reported rod wear on JP2 - No change in previously reported wedge movement and rod wear on JP09. - No change in previously reported wedge movement and rod wear on JP10. - No change in previously reported wedge movement and rod wear on JP11. - No change in previously reported wedge movement and rod wear on JP12. - No change in previously reported wedge movement on JP13. - No change in previously reported

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Continued)			wedge movement on JP15. - No change in previously reported wedge movement and rod wear on JP17.
		EVT-1	Jet Pump Beams (BB1 & BB3) on pumps 8-11, 16 and 20 - JP10 was found with an indication in the BB3 area. Use-As-Is Disposition
		EVT-1	Riser welds RS6 & RS7 on the 30, 60, 120, 150, 240 and 270 degree risers.
		EVT-1	Riser welds RS 8 & RS9 on the 30, 60, 90, 120, 150, 210, 240, 270, 300 and 330 degree risers - Indication was found adjacent to the RS9 weld on JP14 side of the 240 degree riser. Use-As-Is Disposition - Indication was found adjacent to the RS9 weld on JP16 side of the 270 degree riser. Use-As-Is Disposition
		EVT-1	Riser Brace Yoke to riser welds (2a,b,c and d) on the 30, 60, 120, 150, 240 and 270 degree risers
		EVT-1	Riser Brace Leaf to pad welds (1a,b,c and d) on the 30, 60, 120, 150, 240 and 270 degree risers
		VT1/VT3	Aux. wedges on Jet Pumps 11, 16 and 20
		VT-1	Set Screw gaps on Jet Pumps 11, 13-16 and 20 - Gap was found on the vessel side of JP13. Aux. wedge installed
		EVT-1	Riser weld RS1 on the 120, 240 and 270 degree risers

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Continued)			- Indication was found adjacent to RS1 weld on the vessel side. Use-As-Is Disposition
		EVT-1	Riser weld RS2 on the 240 and 270 degree risers
		VT-3	Riser Brace assembly on the 240 and 270 degree risers
	RF10 (3/06)		Examined all previously installed repair clamps & wedges a. Pre-emptive repair, clamps installed, on the remaining 13 JP's due to increase in core differential pressure in Cycle 10 (20 JP's now have clamps) b. UT JP beams, replaced two that had flaw like indications
	RF09 (3/04)	UT / EVT-1 VT-1	UT of 2 risers with no indications noted. Have completed 50% of inspections per BWRVIP guidelines. a. Performed re-inspection of main wedges and set screws for gaps (all) b. Identify locations where gaps/ wedge wear was noted during RF09, which required aux. wedge/ clamp installation c. Pre-emptive repair (i.e., clamp / wedge installation) performed. Installed clamps on JP's 5, 6, 13, 15, 16, 19 and 20. Installed auxiliary wedges on JP's 1, 7, 16, 19 and 20

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Continued)			
	RF08 (3/02)	EVT-1 VT-1	Baseline inspection of 5 JP's performed. Expanded sample of all to determine restrainer bracket wedge wear and / or set screw gaps. Installed 2 aux. wedges, (JP 6 & 11) to address gaps. 3 additional set screw gaps identified (JP 7,16,20 gaps within engineering allowable) No other indications were noted.
		VT	RF07 JP 5 & 6 reinspected wedges for previously identified movement, no major change noted
	RF06	EVT-1 VT-1	No Indications Welds RS-1, RS-2 & RS-3 Riser welds RB-1, RB-2, RB-8 & RB-9
	RF06 (5-98) Expanded Scope	VT-1	Beam engagement, Rams head seating, Set screw gap & tack welds, and wedge assembly
	RF05 (11/95)		Adjusting screws gap RF04-RF05
	RF04 (5/95)		Replaced Beams RF04
	RF02 (3/92)	VT-1	Adjusting screws tack welds RF01, 2
	RF01 (10/90)		

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Diffuser	RF16 (4/18)		No inspections performed
	RF15 (4/16)	EVT-1	Examined DF-1, DF-2 DF-3 and AD-2 Jet Pump Diffuser and Adaptors on Jet Pumps 7-11 and DF-3 on Jet Pump 17. No indications found
	RF14 (4/14)		No inspections performed
	RF13 (4/12)		No inspections performed
	RF12(4/10)	EVT-1	Examined DF-1, DF-2 DF-3 and AD-2 Jet Pump Diffuser and Adaptors on Jet Pumps 6 and 13-20. No indications found
	RF11 (3/08)		No inspections scheduled
	RF10 (3/06)		No inspections required
	RF09 (3/04)	UT	UT (TEJET / DF-1, DF-2, DF-3 and AD-2) of 11 Jet Pump diffusers. No indications found
	RF08 (3/02)		Diffuser welds were part of JP baseline
	RF07 (3/00)		JP 5,6,15,16 Inlet mixers, crud buildup noted
	RF06 (5-98)		ISI Program plan has no special inspection frequency, it is performed during the code required B-N-1 examinations.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
CRD Guide Tube	RF16 (4/18)		No inspections performed
	RF15 (4/16)		No inspections performed
	RF14 (4/14)		No inspections performed
	RF13 (4/12)		No inspections performed
	RF12(4/10)		No inspections performed
	RF11 (3/08)	EVT-1 VT-3	1 guide tube examined in place, no indications found
	Mid-Cycle (11/07)	VT-1	Guide Tube Base to Body Weld CRGT-3 at core locations 1803 and 2203 from Lower Plenum. Approximately 30% coverage was obtained with VT-1 resolution. No indications found
	RF10 (3/06)	EVT-1 VT-3	1 guide tube examined in place, no indications noted
	RF09 (3/04)	EVT-1	6 guide tubes examined in place, no indications noted
	RF08 (3/02)	VT-1 EVT-1	9 guide tubes examined in place, no indications noted
	RF07 (3-00)		No inspections performed
	RF06 (5-98)		N/A
Lower Plenum	RF16 (4/18)		No inspections performed
	RF15 (4/16)		No inspections performed
	RF14 (4/14)		No inspections performed
	RF13 (4/12)	EVT-1 VT-1 VT-3	Performed best effort examinations on 21 CRDHs below core plate made accessible by disassembly of Jet Pumps.

Reactor Internals Inspection History

Plant: Nine Mile Point Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Lower Plenum (Continued)			Areas examined include CRDH/ST-1, CRDH-1, ST/RPV-1 and Stub Tubes. No indications found
		EVT-1 VT-1 VT-3	Performed best effort examinations on 11 shroud support legs. Areas examined include H10, H11 and H12.
		VT-3	Performed examination of RPV bottom head through 12 Jet Pump locations. Minor debris noted and retrieved.
		VT-3	Performed ASME VT-3 of all shroud support legs. No indications found
	RF12 (4/10)		Inaccessible
	RF11		Inaccessible
	Mid Cycle (11/07)	VT-1	CRD Stub Tube to RPV (ST/RPV-1) weld at core locations 1803 and 2203. Approximately 30% coverage was obtained with VT-1 resolution. No indications found
		VT-1	Stub Tube Base Metal (Stub Tube) at core locations 18-03 and 22-03. Approximately 25% coverage was obtained with VT-1 resolution. No indications found
		VT-1	CRD Housing to Stub Tube Weld (CRDH/ST-1) at core location 22-03. Approximately 25% coverage was obtained with VT-1 resolution. No

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Lower Plenum (Continued)			indications found
		VT-1	Bottom Head Cladding (RPV-BOT) at 202 degrees.100% of the accessible area was inspected with VT-1 resolution. No indications found
	RF10		Inaccessible
	RF09		Inaccessible
	RF08		Inaccessible
	RF07		Inaccessible
	RF06		Inaccessible
In-Core Housing	RF16 (4/18)		Inaccessible
	RF15 (4/16)		Inaccessible
	RF14 (4/14)		Inaccessible
	RF13 (4/12)		Inaccessible
	RF12 (4/10)		Inaccessible
	RF11 (3/08)		Inaccessible
	RF10		Inaccessible
	RF09		Inaccessible
	RF08		Inaccessible
	RF07		Inaccessible
	RF06		Inaccessible
Dry Tube	RF16 (4/18)	EVT-1	IRM 32-27, SRM 16-21 and LPRM 08-49 were inspected. NRI
	RF15 (4/16)	EVT-1	Two (2) dry tubes inspected

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Dry Tube (Continued)			No indications found.
	RF14 (4/14)		No inspections performed
	RF13 (4/12)		No inspections performed
	RF12 (4/10)	EVT-1	Two (2) dry tubes inspected No indications found.
	RF11 (3/08)	EVT-1	Two (2) dry tubes inspected per SIL 409 R2. No indications found.
	RF10 (3/06)	VT-1	Two (2) dry tubes inspected per SIL 409 R2. No indications noted. Two (2) original dry tubes replaced due to age.
	RF09 (3/04)		No inspections performed.
	RF08 (3/02)		9 dry tubes examined per SIL409-R2, no indications noted
	RF07 (3/00)		No inspections performed
	RF06 (5/98)		RF06 (5-98) - Examined 12 Dry Tubes, 3 were reported separation at the collar to shaft interface
	RF05 (11/96)		
	RF04 (5/95)		Bent plunger found @RF04 Replaced @RF05
	RF01 (10-90)		
Instrument Penetrations	RF16 (4/18)	VT-2	Performed VT-2 on all instrument nozzles. No indications found Performed VT-2 on eleven (11)

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Instrument Penetrations (Continued)	RF15 (4/16)	VT-2	instrument nozzles. No indications found
	RF14 (4/14)	VT-2	Performed VT-2 on eleven (11) instrument nozzles. No indications found
	RF13 (4/12)	VT-2	Performed VT-2 on eleven (11) instrument nozzles. No indications found
	RF12 (4/10)	VT-2	Performed VT-2 on eleven (11) instrument nozzles. No indications found
	RF11 (3/08)	VT-2	Performed VT-2 on eleven (11) instrument nozzles. No indications found
	RF10 (3/06)		No inspections required
	RF09 (3/04)		No inspections performed
	RF08 (3/02)	UT	Nozzle N-14 (ICS) required by SIL 571, No indications found
	RF97 (3/00)		No inspections performed
	RF06 (5/98)		No Inspections performed
Vessel ID Brackets	RF16 (4/18)	EVT-1	Jet Pump Riser Brace to RPV RB1a,b,c,d welds inspected at 30, 90, and 120 degrees. NRI
	RF15 (4/16)	VT-3	Performed examinations on twelve Feedwater Sparger end bracket pins. No new wear observed. Performed examinations on pre-emptive repairs installed during RF14 on 240° and 290° pins to mitigate further wear. No indications noted

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Vessel ID Brackets (Continued)	RF14 (4/14)	VT-3	Performed examinations on twelve Feedwater Sparger end bracket pins. No new wear observed. Compared previously identified wear on 240° and 290° pins - no change noted from previous inspection. Pre-emptive repairs performed on 240° and 290° pins to mitigate further wear. Post inspections performed to re-establish new baseline.
	RF13 (4/12)	EVT-1	Performed examination on four Jet Pump Riser Brace to RPV attachment welds. No indications found
		VT-3	Performed examinations on twelve Feedwater Sparger end brackets and pins. Two brackets (240° and 290°) have evident of wear into the top plate of the bracket. No other indications found
		VT-3	Performed examinations on two Steam Dryer Guide Rods to RPV attachment welds and HAZ. No indications found
	RF12 (4/10)	VT-3 EVT-1	Examined four Core Spray Piping Brackets (195, 265, 290 and 345) No indications found. Examined Feedwater A, B, C, D, E and F Sparger End Brackets. No indications found.
	RF11 (3/08)	EVT-1	Examined six (6) Jet Pump Riser Brace to RPV attachment welds at 30, 60, 120, 150, 240 and 270 degree locations. No indications found

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Vessel ID Brackets (Continued)	RF10 (3/06)		No inspections required
	RF09 (3/04)	EVT-1	Examined 2 JP riser brace attachments, no indications noted
	RF08 (3/02)	EVT-1	Examined 3 JP riser brace and 8 CS vessel attachment welds, no indications noted
	RF07 (3/00)		RF07 (3/00) - No inspections performed
	RF06 (5-98)		RF06 (5-98) - No Indications Jet Pumps 1 thru 10 riser brace welds
	RF04 (5/95)	VT	50% riser brace welds each outage No indications
	RF02 (3/92)		
	RF01 (10/90)		
LPCI Coupling	RF16 (4/18)	EVT-1 VT-1, VT-3	Examined 315 degree coupling, no indications noted.
	RF15 (4/16)		No inspections performed
	RF14 (4/14)	EVT-1 VT-1, VT-3	Examined 135 degree coupling, no indications noted.
	RF13 (4/12)	EVT-1	Performed examination of the Shroud attachment ring to Shroud weld only. No indications found
	RF12 (4/10)	VT-1, VT-3 EVT-1	Examined 45 degree coupling - No indications found.
	RF11 (3/08)		No inspections performed

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
LPCI Coupling (Continued)			
	RF10 (3/06)	EVT-1	RF010, One coupling inspected. No indications found.
	RF09 (3/04)	EVT-1	No inspections performed.
	RF08 (3/02)		Examined the remaining 2 couplings, no indications noted
	RF07 (3/00)		Per BWRVIP guidelines one LPCI coupling was examined. No indications found
	RF06 (5-98)		No inspections performed

Steam Dryer	RF16 (4/18)	EVT-1 VT-1	Performed re-inspection in accordance with BWRVIP-139-A and NMPNS long term EPU inspection plan. Inspections in 2018 included all locations with an alternating stress ratio below 2.0 without use of velocity inducted loading. These examinations confirmed that EPU has not caused any change in the material condition of the Dryer.
	RF15 (4/16)	EVT-1 VT-1	Performed post EPU baseline re-inspection in accordance with BWRVIP-139-A and NMPNS commitment to NRC to perform steam dryer inspections during the first two scheduled refueling outages after EPU implementation. This baseline included inspections of all susceptible locations and repaired areas on the Dryer. These examinations confirmed that EPU has not caused any change in the material condition of the Dryer.

Reactor Internals Inspection History

Plant: Nine Mile Point Unit 2

Steam Dryer (Continued)			
	RF14 (4/14)	EVT-1 VT-1, VT-3	Performed post EPU baseline re-inspection in accordance with BWRVIP-139-A. This baseline included inspections on all repaired areas on the Dryer. These examinations confirmed that EPU has not caused any change in the material condition of the Dryer. Pre-emptive Mod installed two stiffener channels on the Dryer center closure plates. Stiffener channels will dampen the vibrations on the Dryer due to increased loads imparted by EPU.
	RF13 (4/12)	VT-1	Performed examination on four earthquake blocks and previously recorded wear. No new indications were found and no change was noted in previous indications.
		VT-1	Performed examination on five high stress welds (HS5, 6, 7, 8, 9 and 10) and previously recorded indications. No new indications were found and no change was noted in previous indications.
		VT-1	Performed examination on the 0° and 180° lower guides and previously recorded wear and deformed plates. No new indications found and no change was noted in previous indications.
		VT-1	Performed examination on the 0° and 180° lower to mid support ring vertical welds. Two indications were noted , one on each weld. Indications were 9" and 9.5" respectively. Indications were repaired by welding.
		VT-3	Performed an overall examination on the Dryer and no additional indications were found

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Plant: Nine Mile Point Unit 2

Steam Dryer (Continued)		EVT-1 VT-1 VT-3	Performed extensive repairs and modifications to support EPU. Construction inspections were performed and will be used as the baseline going forward.
	RF12 (4/10)	VT-1	Steam Dryer Exterior Examined several previously identified indications on Cam Nut Tack welds for change. No significant changes noted.
		VT-1	Examined exterior Seal Plates and welds At 4, 94, 184 and 274 degrees. No indications found.
		VT-1	Examined several previously identified indications on Tie Bar welds for change. No changes noted.
		EVT-1	Examined vertical Drain Channel welds and previously noted indications at 140 and 320 degrees. No significant changes noted.
		VT-1	Examined High Stress Area HS16 – no indications noted
		VT-1	Examined several previously identified indications on Lifting Rod assemblies at 40, 140, 220 and 320 degrees for change. No significant changes noted.
		VT-1	Examined Hood Repaired welds V07, V16, V29 and V40. No indications found.
		UT	Performed supplemental UT depth sizing on previously identified visual indications on two Drain Channel welds and the Upper Support Ring. All indications in ring confirmed shallow IGSCC in the ring. Drain channel indications confirmed shallow part

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Plant: Nine Mile Point Unit 2

Steam Dryer (Continued)			through-wall.
			Steam Dryer Interior
		VT-1	Examined interior Seal Plates and welds At 4, 94, 184 and 274 degrees. No indications found.
		VT-1	Examined 16 interior Hood Plate attachment welds on A – F hoods. Cracked welds found at several locations. Indications consistent with BWRVIP-139. Use-As-Is Disposition
		VT-1	Examined 12 interior Drain Trough Pipe assembly welds on A – F drain troughs. No indications found.
	RF11 (3/08)	VT-1	Completed baseline inspection of BWRVIP-139 and SIL-644. The following locations were visually inspected:
		VT-1	Cam Nut/Washer Tack Welds on all banks. Cracked tacks found at six locations. Use-As-Is Disposition
		VT-1	Four (4) Earthquake blocks – wear and deformation noted from misalignment during installation. Use-As-Is Disposition
		EVT-1	Thirty four (34) upper and lower bank horizontal welds no indications found
		VT-1	Two (2) drain channel vertical welds with previous indications. Some of the previous indications could not be found – no change noted in the remaining indications.
		VT-1	Six (6) hood high stress welds – no indications found.
		EVT-1	Lifting eye to rod tack welds - cracked

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Steam Dryer (Continued)			tacks found on all four (4) lifting rods. Use-As-Is Disposition
		VT-1	Upper Support Ring – reinspected previously identified indications with no change noted. Identified several new indications. Use-As-Is Disposition
		VT-1	Twenty four(24) vertical bank welds - no indications found
		VT-1	Reinspected bent gusset plate on the 180 degree lower guide. No change from previous inspection. Steam Dryer Upper Guides at 0 and 180 degrees – No indications found
	RF10 (3/06)	VT-1, VT-3 EVT-1	All BWRVIP-139 required inspections have been completed. Supplemental inspections of drain channels performed. Monitoring of cracking in upper support ring, no changes noted.
	RF09 (3/04)	VT-1, VT-3 EVT-1	RF09, Baseline SIL-644 exams completed. Repairs made to one hood due to cracking, opposite hood was preemptively repaired. Monitoring of cracking in upper support ring, no changes noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud (BWRVIP-76)	04/95	EVT-1 and UT	Inspections per BWRVIP Guidelines of all shroud repair design-reliant hardware prior to installation of comprehensive repair (4 GE designed tie-rod assemblies). Inspection of shroud consisted of EVT-1 of all ring segment welds (100% of accessible ring surfaces examined), EVT-1 of vertical welds between H1 & H2 OD surface >35% length/weld (ID not accessible), UT of all 6 beltline vertical welds >30% length/weld, and EVT-1 of vertical welds between H6 & H7 OD surface >22% length/weld (ID not accessible). Approximately 51" of 356" examined at the core plate support ring weld (HAZ of H5) had indications (H5 is structurally replaced by comprehensive shroud repair). All other areas examined had No Reportable Indications. Performed EVT-1 on all shroud vertical welds adjacent to beltline (six verticals, 100% of accessible OD surfaces). No Reportable Indications.
	03/97	EVT-1, VT-3	Performed VT-3 of all four tie-rod assemblies. One reportable indication related to original installation of locking device at upper spring, not service induced. Properly latched locking device.
	01/00	ET/UT	Performed automated volumetric examination (TEIDE 2 tooling) of shroud vertical welds V-14 through V-19 in accordance with BWRVIP-03, BWRVIP-07 and BWRVIP-63. No Reportable Indications.
	02/02	EVT-1	6 vertical welds from the OD per BWRVIP-76. No indications.
	03/04	EVT-1	Examined six welds, including 3 welds inaccessible to UT and three with only

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud (BWRVIP-76) (continued)			single side access. No reportable indications.
	04/06	EVT-1	Ring segment vertical welds. Since the location of the welds was not known, examined 100% of the ring segments. No reportable indications in vertical welds. Indications adjacent to weld H-5 were noted; however, the shroud tie rods structurally replaced this weld.
	03/08	EVT-1	Examined accessible areas of the 6 non-beltline vertical welds from the OD. No reportable indications.
	03/10	UT	Performed automated UT of the six shroud beltline vertical welds and two non-beltline vertical welds (one upper barrel and one lower barrel). No Reportable Indications.
	04/12	EVT-1	Visually examined 16 Ring Segment vertical welds (V1, V2, V3, V4, V8, V9, V10, V11, V12, V13, V20, V21, V22, V23, V24, and V25) per BWRVIP-76-A requirements. Since the location of the welds are not known, examined all accessible areas of the ring segments from the OD. No reportable indications in the vertical welds. Known indications adjacent to weld H-5 were again noted, however, the shroud tie rod repair structurally replaces the H5 weld and these indications have been evaluated as-is.
	04/14	EVT-1	Visually examined the 4 vertical welds below H7 (V29, V30, V31, and V32) BWRVIP-76 rev 1 requirements for a repaired Core Shroud. No reportable indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	03/18	UT	Examined welds V5, V6, V7, V26, V27 and V28 with NRI. Note that due to equipment interferences, the angle and distance on the V27 valve resulted in 0% EVT-1 coverage.
		EVT-1	Performed automated UT on welds V5, V14, V15, V16, V17, V18, V19, V26, V27, and V28 with NRI. Off-axis UT exams was performed on V16 and V17 per BWRVIP Letter 2016-030 with NRI. Examined with EVT-1 welds V06, V07, V29, V30, V31, and V32 with NRI. Welds V30 had a zero (0) coverage but a best-effort EVT-1 was performed with NRI. No reportable indications.
Shroud Support (BWRVIP-38)	04/95	EVT-1	EVT-1 of H8 and H9 for approx 10" -12" at 4 locations of shroud repair hardware attachment areas. Access Hole Covers; VT/UT in 1991, circ indications observed and permanent repair installed 1993.
	01/00	EVT-1	Performed visual examination of H8 and H9 in accordance with BWRVIP-38 adjacent to AHC between jet pumps #20 - #1 (e.g. at least 10% of total circumference examined). No Reportable Indications.
	04/06	EVT-1	Examined >10% of H8 and H9 from annulus adjacent to AHC between jet pumps 10 & 11. No Reportable Indications.
	04/12	EVT-1	Visually examined H8 and H9 welds accessible areas from the Annulus top side adjacent to the AHC (between JP10& JP11 and JP20 & JP01) per BWRVIP-38 requirements. Approximately 22% coverage. No reportable indications noted.
	03/18	EVT-1	Examined 10% of welds H8 and H9 with

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			NRI.
Shroud Repair Hardware (BWRVIP Letters 2006-112 and 2006-220)	04/06	EVT-1, VT-3	EVT-1 of all tie rod upper support vertical faces, VT-3 of high-stressed fasteners and other contact points, and overall VT-3 per BWRVIP Letters 2006-112 and 2006-220. Also, VT-3 of core plate wedges adjacent to repair hardware. No reportable indications.
	04/16	EVT-1, VT-3	EVT-1 of Long Upper Support high stress areas on all four tie rods, VT-3 of fasteners and other contact points, and overall general hardware on all four tie rods per BWRVIP 76-R1-A and GEH recommendations. Also, VT-3 of core plate wedges adjacent to repair hardware. No reportable indications, except on the 290° upper nut retainer/spring that is not fully engaged; this was a previous condition that shows no changes from the previously acceptable condition.
Core Spray Piping (BWRVIP-18)	1980's to 1996	VT-1 (1 mil)	IEB 80-13/NUREG of piping and welds in annulus. No indications observed.
	03/97	UT, EVT-1	UT or EVT-1 performed in accordance with BWRVIP-18. Two indications (1.60" and 2.25" in length) observed at slip joint (P6), evaluated for at least 48 months of hot operation.
	01/00	EVT-1	Performed visual examination of P4d and P8a (4 connections) and P2 at both T-boxes in accordance with BWRVIP-18. No Reportable Indications.
	02/02	UT	BWRVIP-18 UT examinations of all accessible welds (32). No relevant indications.
		EVT-1 on Piping	BWRVIP-18 EVT-1 on 5 welds

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	03/04	EVT-1	inaccessible to UT. No indications.
	04/06	UT EVT-1	Examined 100% of P8a & P4d target welds. No relevant indications. BWRVIP-18 UT examinations of all accessible welds (32). No relevant indications.
	03/08	EVT-1	Examined two P4a, one P4b, one P4c, four P4d, two P8a and two P8b welds. No relevant indications.
	03/10	UT EVT-1	Examined all four P4d, all four P8a and all four P8b welds. No relevant indications. UT examinations of all accessible welds (32). No relevant indications. Examined welds for which two-sided UT has not been demonstrated (P2s, P3s, P8as, P8bs, P4d). No relevant indications.
Core Spray Piping (BWRVIP-18) (continued)	04/12	EVT-1	Visually examined 18 welds per BWRVIP-18 rev 1 requirements; 1P2, 2P2, 1P3, 2P3, 3P3, 4P3, 1P8a, 2P8a, 3P8a, 4P8a, 1P8b, 2P8b, 3P8b, 4P8b, 1P4d, 2P4d, 3P4d, 4P4d. No reportable indications.
	04/14	EVT-1	Examined 36 welds per BWRVIP-18 rev 1 requirements; 2-P1, 2-P2, 4-P3, 4-P5, 4-P6, 4-P7, 4-P8a, 4-P8b, 4-P4b, 4-P4d. No reportable indications. Note-P1 welds had 0% EVT-1 coverage.
	03/16	EVT-1	Examined 36 welds per BWRVIP-18-R1-A requirements; 2-P1, 2-P2, 4-P3, 4-P5, 4-P6, 4-P7, 4-P8a, 4-P8b, 4-P4b, 4-P4d. No reportable indications. Note-P1 welds had 15% EVT-1 credible coverage credited.
	03/18	EVT-1	Examined 36 piping welds and 8 bracket

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			attachment welds. No reportable indications.
		VT-3	Examined piping bracket and tack welds at azimuth 65^0, 125^0, 245^0, and 305^0. No reportable indications.
Core Spray Sparger (BWRVIP-18)	1980's to 1996	VT-1 (1 mil)	IEB 80-13/NUREG of welds on sparger. No indications found
	03/97	CSVT-1, VT-3	CSVT-1, VT-3 performed in accordance with BWRVIP-18, geometry tolerant. No Reportable Indications.
	02/02	EVT-1 of S1, S2, S4 and brackets; VT-1 of S3	Examined 100% Sparger nozzles S3a, S3b, & S3c nozzle welds, 100% of the S1, S2 and S4 welds and 100% sparger bracket SB welds. No Reportable Indications.. Examined for IEB 80-13 and BWRVIP-18. No indications.
	04/06	EVT-1 of S1, S2, S4 and brackets; VT-1 of S3	Examined 50% (Upper) Sparger nozzles S3a, S3b, & S3c nozzle welds, 100% of the S1, S2 and S4 welds and 100% sparger bracket SB welds. No Reportable Indications.
	03/10	EVT-1 of S1, S2, S4 and brackets; VT-1 of S3	Examined 50% (Lower) Sparger nozzles S3a, S3b, & S3c nozzle welds, 100% of the S1, S2 and S4 welds and 100% sparger bracket SB welds. No Reportable Indications.
	04/14	EVT-1 of S1, S2, S4 and brackets; VT-1 of S3	Examined 50% (Upper) Sparger nozzles S3a, S3b, & S3c nozzle welds, 100% of the S1, S2 and S4 welds and 100% sparger bracket SB welds. No Reportable Indications.
	03/16	EVT-1 of S1, S2, S4 and brackets; VT-1 of S3	Examined 50% of S3c Drain Plugs on lower sparger per BWRVIP-18-R1-A, with RI; for no observable tack welds from original
		VT-1	

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			construction; however, exam coverage was limited to about 35%.
Top Guide (Rim, etc.) (BWRVIP-26 & 183)	04/95	VT-1	VT-1 of 5 cells. No indications. VT-1 of alignment assemblies. No indications.
	04/97	VT-1	VT-1 of alignment assemblies and adjacent rim weld. No Reportable Indications.
	01/00	N/A	No examinations performed.
	02/02	EVT-1, VT- 1	Inspected 2 alignment assemblies (VT-1) and accessible rim welds (EVT-1) per BWRVIP-26. No indications.
	03/04	EVT-1	Inspected two Guide Aligner Pins and rim welds at adjacent locations. No recordable indications.
	03/08	EVT-1, VT-1	Examined the rim weld adjacent to all four aligner pins. Not able to claim any EVT-1 coverage per BWRVIP-03 Rev. 10. Obtained 50% VT-1 coverage per BWRVIP-03 Rev. 10. No reportable indications. Actual exam coverage same as previous – change is due to change in EVT-1 definition.
	03/10	EVT-1	EVT-1 of 9 top guide grid cells (5%). NRI.
	04/12	EVT-1	Visually examined the Rim Weld (11) at all accessible cell locations (20 cells) and two Aligner Pins/Assemblies (0° & 270°) per BWRVIP-26-A requirements. No reportable indications.
	03/16	EVT-1	Visually examined the Rim Weld (11) at all accessible cell locations (20 cells) and two Aligner Pins/Assemblies (90° & 180°) per BWRVIP-26-A requirements. No

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	03/18	EVT-1 VT-1	reportable indications. Examined circumferential rim weld from 20 cell locations. Indications were found at grids 22-03 and 26-03. This was reported to the BWRVIP and presented at the June 2018 BWRVIP meeting in Seattle, WA. Lower grid-grid intersections were examined at 9 cells with NRI. 4 aligner pins were examined with indications at azimuth 0^0 and 90^0. No reportable indications at other two locations.
Core Plate (Rim, etc.) (BWRVIP-25)	N/A 04/06 03/16	N/A VT-3 VT-3	Core Plate Wedges installed 4/97. Examined core plate wedges as part of shroud repair (tie rod) inspections. No Reportable Indications. Examined all four core plate wedges as part of shroud repair (tie rod) inspections. No Reportable Indications.
SLC (BWRVIP-27)	01/00 03/04 03/08 03/18	UT PT UT UT	Performed augmented (non PDI) volumetric examination of nozzle to safe-end weld. No Reportable Indications. Performed surface examination of Nozzle To Safe End weld. No Reportable Indications. UT in accordance with ASME Section XI Appendix 8 Supplement 10 was performed on the Unit 2 nozzle-to-safe end weld with acceptable results. UT was performed on the Unit 2 nozzle-to-safe end weld with NRI.
Jet Pump Assembly	03/93	VT-1	JP#7 and JP#18 set screws backed out;

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
(BWRVIP-41)			repaired and tack welded.
	04/95	VT-1	Hold down beams, beam bolt keepers, lock plates and retainers; restrainer wedges, stops, and adjusting screws, clamp bolts and keepers; riser brace assemblies, adapter and baffle plate welds, sensing lines and sensing line brackets per various SILS. No Reportable Indications. Inspect 100% every other outage.
	04/97	UT	Performed UT examination of jet pump beams. JP#7 beam rejectable indication at center hole region. Beam replaced.
	01/00	UT/EVT-1	Performed UT examination of jet pump beams using technique capable of detecting cracking at throat and ears. NO Reportable Indications. Performed visual examination of RS-1,-2,-3 riser welds. No Reportable Indications.
	02/02	UT/ET or EVT-1 EVT-1, VT-1	Performed examinations of at least 50% of the medium and high priority jet pump assembly welds in accordance with BWRVIP-41 using combination of automated (e.g. TEJET tooling) volumetric and visual techniques. JP#15 observed possible wedge (WD-1) movement, expanded inspection to include restrainer components, with no relevant indications. All other components No Reportable Indications. Jet pump beams were replaced on 18 jet pumps. EVT-1 and VT-1 of 18 beams; pre- and post replacement (pumps 7 and 18 not replaced because they already had BWR-4 style beams) A gap was identified on jet pump 1, and a setscrew was missing on jet pump 17.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (BWRVIP-41) (continued)	03/04	EVT-1	Auxiliary wedges were installed at these locations. Additionally, the set screws on pumps 7 and 18 and the riser braces for jet pumps 17 and 18 were inspected. Jet pump sensing line clamps were installed on 8 jet pumps (1, 2, 3, 10, 11, 12, 13, 20)
		VT-1	Examined 50% of jet pump high priority welds (AD-1, AD-2, DF-2, AD-3a, AD-3b, RS-1, and RS-2, RS-3). Examined a mix of jet pump medium priority welds (MX-1, MX-2, MX-4, RB-1, RB-2, RS-4, RS-5, RS-8, RS-9). No reportable indications.
	04/06	EVT-1, VT-1	Examined all 20 jet pump WD-1 main wedges. Found very minor wedge movement on 2 jet pumps, severe movement on one jet pump, and one actuating rod resting against - and wearing into - the guide sleeve. All evaluated for another cycle.
	03/08	EVT-1	EVT-1 of 17 high-priority RS-1, RS-2 and RS-3 welds. VT-1 of all 20 main wedges (WD-1). Found signs of wedge movement on four jet pumps. Replaced the restrainer gate and installed a mitigating slip joint clamp on the pump with the most severe movement. No significant change since 2004 on the other jet pumps. The other jet pumps were evaluated for another cycle.
		VT-1 VT-3	Inspected 10 each DF-2, AD-3a,b AD-1 and AD-2 high priority welds Inspected 8 medium priority Riser Brace welds (RB-1a, 1b, 2a, 2b), 16 medium priority riser welds (RS-4,5,8,9. 27 medium priority MX1, MX-3a, MX-3b welds, and 10 medium priority DF-1 welds.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (BWRVIP-41) (continued)	03/10	EVT-1	Inspected all 20 Jet Pump main wedges (WD-1), and Aux wedges and set screws on 2 jet pumps. A second aux wedge had to be installed on JP17, which already had one aux wedge. Inspected 5 restrainer bracket posts retainer tack welds.
		VT-1	Inspected medium priority bolting on inlet-to-mixer clamps (IN-5) on 10 jet pumps.
	04/12	EVT-1	Inspected new restrainer bracket and slip joint mitigation clamp on one jet pump.
			Inspected three RB-1a/b, three RB2a/b, seven DF-1, four AD-1 and 4AD-2 welds. No recordable indications.
			Inspected all 20 WD-1 and three aux wedges, 5 retainer tack welds, 2 JPSL clamps. No recordable indications.
			Visually examined 4 medium priority Riser Brace welds (RB-1a and RB-2b on JP 10 and RB-1b and RB-2b on JP 15 per BWRVIP-41 rev 3 requirements. No recordable indications.
		VT-1	Visually examined 24 high priority Riser welds; RS-1 and RS-3 on risers 5/6, 13/14, 15/16, and 19/20 per BWRVIP-41 rev 3 requirements. Additionally, examined the RS-2 on all 20 JP Risers per BWRVIP-41 rev 3 requirements and for extent of condition from the RS-2 crack on Unit 1 JP13/14 Riser. No recordable indications.
			Visually examined 5 medium priority Mixer welds (MX-1) on JP10, 11, 14, 15, 16) per BWRVIP-41 rev 3 requirements. No recordable indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			Visually examined 19 Jet Pump wedges (WD-1) per BWRVIP-41 rev 3 requirements and on-going program guidance. An INR documents existing wear on JP14 due to the rod wearing into the guide tube. Evaluated as-is for 1-cycle.
		VT-3	Also, replaced two main wedges (JP05 and JP08) due to known degraded conditions. NRI post repairs.
	04/14	UT	Visually examined Aux Wedges and Set Screws on JP01. No recordable indications.
		EVT-1 VT-1	Visually examined the Swing gate Retainer Cup (Keeper) tack welds on 5 swing gates per Extent of condition for Dresden OE; JP06, 12, 14, 16, 19, and 20. An INR documents a broken tack weld on the sole tack weld for JP06 Keeper. No rotation or wear was evident. Evaluated for 1-cycle as-is.
		VT-3	Visually examined the Jet Pump Beam Retainer Clips on 19 Jet Pumps per OE 33533 (note-JP07 and JP08 clips have been removed). NRI.
Jet Pump Assembly (BWRVIP-41) (continued)	03/16	EVT-1	Performed UT examination of jet pump beams at welds BB-1, BB-2, BB3. NRI. Visually examined two jet pump riser RS-8 and 9 welds, NRI.
		VT-1	Visually examined 100% of main wedges/rods including four replaced main wedges, three aux wedges, and four swing gate retainer bracket keeper welds six slip joints per SC 12-12 and 12-14. All NRI, except JP03 and JP06 have cracked keeper tack welds.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (BWRVIP-41) (continued)	03/18	VT-3 EVT-1 VT-1 VT-3	Visually examined one slip joint repair clamp, six JP sensing line repair clamps and three replaced swing gates. NRI. Visually examined with EVT-1 42 High Priority welds and 30 Medium Priority welds per BWRVIP-41-R3 with NRI. Weld categories are: 3 RB1, 3 RB-2, 1 RS-1, 1 RS-3, 2 RS-8, 2 RS-9, 5 IN-5, 5 MX-3a, 5 MX-3b, 5 DF-1, 10 DF-2, 10 AD-3 a/b, 10 AD-1, 10 AD-2. All NRI. Note-a draw bead was identified this outage on the JP 17/18 riser pipe. Visually examined 2 WD-1 for ongoing minor wear with RI (but no changes), 1 Aux Wedge for repair hardware VT-1 reinspection with NRI, 8 swing gate retainer cup tack welds, including 2 for follow-up on a broken tack weld, with NRI, except the known indications with no changes. Visually VT-3 examined 1 slip joint clamp for follow-up on minor wear; RI again with no apparent changes. 29 high-priority welds and 18 medium-priority welds were examined with NRI. Note – no change noticed in draw bead identified in 3/16 on the JP 17/18 riser pipe. 9 (JPs 1-5, 7-8 and 14-15) WD-1 wedges and 2 aux wedges on JPs 1 and 17 were examined with acceptable results and no change in wear from previous examination. Inlet mixer clamp (IN-5) at JPs 14 and 15 were examined with NRI. Sensing line clamps at JPs 01 and 02 were examined with NRI. Slip joint clamp at JP07 was examined with no change from previous examination. No new reportable indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
CRD Guide Tube (BWRVIP-47)	04/97	VT-3	Performed visual examination of CRGTs G-7 and H-8 while removed from core. No Reportable Indications.
	02/02	VT-1, VT-3 on CRGT-1; EVT-1 on CRGT-2 & 3	Examined 6 sets of guide tube welds (CRGT-1, CRGT-2, and CRGT-3) per BWRVIP-47. No Indications. Examined 6 pin welds (FS/GT-ARPIN-1). No Indications.
	03/04	EVT-1, VT-3	Examined 3 sets of guide tube welds (CRGT-1, CRGT-2, and CRGT-3). Examined 3 pin welds (FS/GT-ARPIN-1). No Indications
	04/06	EVT-1, VT-3	Examined 4 sets of guide tube welds (CRGT-1, CRGT-2, and CRGT-3) and FS/GT-ARPIN. No Indications.
	03/08	EVT-1, VT-3	Examined 5 pin/welds (FS/GT-ARPIN-1) and 5 each CRGT-1, CRGT-2 and CRGT-3 per BWRVIP-47 to complete baseline. No Reportable Indications.
	03/10	N/A	No exams performed since 10% baseline completed.
CRD Stub Tube	N/A	N/A	N/A
In-Core Housing	N/A	N/A	N/A
Dry Tube (GE SIL-409 and BWRVIP-47)	04/97	VT	Replaced 6 dry tubes 1997. Dry tubes examined every other outage. Plunger engagement verified each outage.
	01/00	VT	Verified plungers engaged at Top Guide. NO Reportable Indications.
	02/02	MVT-1	Examined 6 dry tubes. Indications observed

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Dry Tube (GE SIL-409 and BWRVIP-47) (Continued)			on 5 dry tubes, and authorized for one additional cycle of operation.
	03/04	N/A	No inspections required until 2016. All original dry tubes have been replaced.
	03/16	EVT-1/VT-3	Examined 3-SRM, 3-IRM and 3-LPRM dry tubes from 2-sides using EVT-1 for upper 2-foot cracking and upper plunger engagement per SIL 409-R5 and inspected 1-SRM and 5-IRM dry tubes from 1-side using VT-3 for upper plunger engagement per SIL 409-R5. NRI for cracking and RI for 8 SRM/IRM dry tubes with reduction in normal plunger engagement; 5 with minimal engagement remaining; Note; all 5 with minimal engagement were last replaced in 1997.
	03/18	EVT-1, VT-3	Examined IRM-17 for engagement and upper 24 inches and IRM-18 and SRM-21 for engagement with NRI but slightly relaxed. No reportable indications.
Feedwater Spargers (BWRVIP-48)	1983	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1986	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1990	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1993	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1995	UT (GERIS)	UT of all four N4 nozzles and inner radii. NRI
	02/02	VT-1	UT of all four N4 nozzles and inner radii. NRI
	2004	UT (GERIS)	Examined all Feedwater Spargers. Examined per NUREG-0619 program and BWRVIP-48.
	04/06		

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Feedwater Spargers (BWRVIP-48) (Continued)			No indications.
		VT-1, VT-3	UT of all four N4 nozzles and inner radii. Acceptable.
	03/08		VT-3 overall condition and VT-1 bracket welds of all FW sparger end brackets. Three FW sparger end brackets showed signs of wear where the pins had worn into the brackets. All stop pin nuts were welded to the pins as a pre-planned measure.
	03/10	VT-1, VT-3	Visual inspection of sparger end brackets. Seven of eight brackets have some amount of acceptable wear. OE26726.
		VT-1, VT-3	
	04/12		Visual inspection of Sparger end brackets. Brackets have no additional discernable wear since 2008.
		VT-1	Inspected FW Sparger welds and nozzles. NRI.
	03/16	VT-1	Visually examined Feedwater Sparger end brackets and pins per on-going program guidance due to minor wear. No additional discernable wear since 2010.
		VT-3/VT-1	
	03/18		Visually examined 7 of 8 Feedwater Sparger end brackets and pins per on-going program guidance due to previous minor wear. RI on 7 of 8 brackets/pins, but with no additional discernable wear compared to 2012 conditions was noted.
		VT-3/VT-1	Examined 8 feedwater brackets and pins and bracket weld with no significant change in wear from previous examination. Examined assembly welds and nozzles with NRI. No reportable indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Instrument Penetrations (BWRVIP-49)	04/97, 01/00, 02/02, 03,04, 04/06, 3/08, 03/10, 04/14, 03/16, 3/18	VT-2	VT-2 system leakage test. Acceptable.
	04/12	VT-2	VT-2 during system leakage test not acceptable. N11B (Upper Inst penetration at 225°) had leakage noted. Repaired prior to S/U. Retest sat.
	04/14	EVT-1	Visually inspected inner surface of all 4 nozzles, N11A/B and N12A/B, NRI.
	03/16	UT	UT to locate and size N-11B Penetration flaws from RPV outside surface of the shell; RI with 2 indications noted that are entirely contained in the J-Groove weld on the RPV interior.
Vessel ID Attachments (BWRVIP-48)	04/95	VT-1, VT-3	Section XI inspections of jet pump riser brace, dryer, feedwater sparger, core spray, and surveillance capsule holder brackets, performed once per interval. VT-3 or VT-1 if in beltline region. No Reportable Indications.
	02/02	VT-1, EVT-1, VT-3	Inspected 8 core spray brackets, 4 feedwater sparger brackets, and 4 steam dryer wall support brackets per BWRVIP-48. No indications.
	03/04	VT-1, EVT-1, VT-3	Examined dryer support lugs and surveillance specimen brackets, with no reportable indications. Examined steam separator and steam dryer guide rod bracket welds. One separator guide rod was bent, but the welds had no reportable indications.
	04/06	EVT-1, VT-3	Examined feedwater sparger end brackets. One FW sparger end bracket pin was

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			missing a lower nut. A new nut was welded into place.
	03/08	EVT-1, VT-3	Performed BWRVIP-48 and ASME Code inspections of four steam dryer wall support lugs. All four lugs sustained some damage during May 2005 installation of new steam dryer, but all lugs acceptable as-is. No recordable indications in welds.
	03/10	EVT-1, VT-3	Performed follow-up exams all 4 steam dryer wall support lugs. No additional damage except for expected wear and tear.
Vessel ID Attachments (BWRVIP-48) (continued)			Performed follow-up exams all 4 steam dryer wall support lugs. No additional damage except for expected wear and tear.
	04/12	EVT-1, VT-3	Performed follow-up visual exams all 4 steam dryer wall support lugs per BWRVIP-48-A and on-going program guidance. Minor additional damage documented in an INR; categorized as normal wear.
		EVT-1	Visually examined 2 JP Riser Brace RPV attachment welds (JP09/10 RB-1a & JP15/16 RB-1b per BWRVIP-41 Rev 3. No recordable indications.
	04/14	EVT-1, VT-3	Performed follow-up exams all 4 steam dryer wall support lugs per BWRVIP-48-A and on-going program guidance. No additional damage except for expected wear and tear.
	03/16	EVT-1, VT-3	Visually examined 7 of 8 Feedwater Sparger end bracket attachment welds/HAZ using VT-3, with NRI, Visually examined 4-upper guide rod bracket attachment welds/HAZ using VT-3,

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Vessel ID Attachments (BWRVIP-48) (continued)			with NRI, Visually examined 2-lower guide rod bracket attachment welds/HAZ using VT-3, with NRI, Visually examined 5-upper surveillance sample holder bracket attachment welds/HAZ using VT-3, with NRI, Visually examined 5-lower surveillance sample holder bracket attachment welds/HAZ using VT-1, with NRI, Visually examined 4-steam dryer wall support lug attachment welds/HAZ and lug surfaces for ongoing wear using VT-1, RI on each lug, but no appreciable changes noted. Visually examined 3 RS-1 Jet Pump Riser Brace attachment welds using EVT-1with NRI.
	03/18	EVT-1, VT-3, VT-1	Examined 8 core spray piping bracket attachment welds with NRI. Examined 4 dryer support lugs with RIs but were evaluated as acceptable. Examined 1 upper/lower surveillance sample bracket attachment weld. Examined 1 feedwater sparger end bracket attachment weld.

RPV Internal Spaces (ASME B.N.1)	02/02	VT-3	VT-3 visual examination for ASME Section XI, B-N-1 of RPV internal surfaces for 360 degrees between steam dam and flange. No indications.
	03/04	VT-3	VT-3 visual examination for ASME Section XI, B-N-1 of RPV internal surfaces for 360 degrees between steam dam and shroud support plate flange. No indications.
	03/08	VT-3	ASME Section XI VT-3 of RPV internal

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	04/12	EVT-1, VT-3	surfaces credited to other exams in annulus area in accordance with Relief Request for alternate examination methods for B-N-1 and B-N-2 components.
	04/14	EVT-1, VT-3	Visually examined the RPV interior surfaces for ASME Section XI VT-3. Exams are credited to other exams in annulus area near H9/H8 welds and near WSL's in accordance with Relief Request (I4R-15) for alternate examination methods for B-N-1 and B-N-2 components.
RPV Internal Spaces (ASME B-N-1, B-N-2)) (continued)	03/16	EVT-1, VT-1 , VT-3	ASME Section XI VT-3 of RPV internal surfaces credited to other exams in accordance with Relief Request for alternate examination methods for B-N-1 and B-N-2 components.
	03/18	EVT-1, VT-1 , VT-3	ASME Section XI VT-3 of RPV internal surfaces credited to other exams in accordance with Relief Request I5R-06 for alternate examination methods for B-N-1 and B-N-2 components. ASME Section XI VT-3 of RPV internal surfaces credited to other exams in accordance with Relief Request I5R-06 for alternate examination methods for B-N-1 and B-N-2 components.
LPCI Coupling	N/A	N/A	Not applicable to Quad Cities.
Steam Dryer (GE SIL-644, GEH reinspection recommendations, and BWRVIP-139)	02/02	VT-3	The dryer was modified to accommodate the Extended Power Uprate. The modification installed a mechanical device on the outlet of the dryer chevrons that would more uniformly distribute the velocity through the dryer and increase moisture removal. General Condition Inspection (VT-3) of general top-view post-modification. No indications.

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Steam Dryer (GE SIL-644, GEH reinspection recommendations, and BWRVIP-139)	03/04	Best Effort VT-1, VT-3	Conducted the following inspections per GE SIL-644 S1: Best effort VT-1 inspections of 100% external vertical and horizontal welds, tie bars, and perforated plates; Best effort VT-1 inspections of 100% internal vertical and horizontal hood welds, struts and supports, plates, drain channels; VT-3 inspections of dryer skirt welds (internal and external). Repaired indications in drain channel-to-skirt welds and tie bar welds, and at outer hood gussets and a stiffener plate added after previous dryer failures. Also found indications (acceptable as-is) at the following locations: Internal struts, vane assembly end plate supports, internal hood welds, guide channels, one drain channel, a hold down assembly tack weld, and perforated plate welds.
	04/06	Best Effort VT-1, VT-3	Performed baseline inspection of new steam dryer installed in May 2005 per BWRVIP-139 and GE recommendations. Inspection scope expanded due to indications found in vane bank end plates, gussets, and damage to skirt. The following damage was attributed either directly or indirectly to a lifting event during the original attempt to install the dryer in May 2005: fatigue cracks and distortion in the dryer skirt and base plate support lug cutouts, fatigue crack in a gusset attached to a vane assembly end plate, and a cracked latch box. The following indications were attributed as noted: lifting eyes rotated (design weakness), stress relief cracking in vane assembly plates (original construction

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			issue), and distortion in perforated plates (original construction issue).
	03/08	Best Effort VT-1, VT-3	Inspections per BWRVIP-139 and GE recommendations, including all previous indications and at least 50% of areas similar to those that were cracked. There were no apparent changes to any of the previous indications, and no new recordable indications.
	03/10	Best Effort VT-1, VT-3	Inspections per BWRVIP-139 and GE recommendations, including all previous indications and at least 50% of areas similar to those that were cracked. There were no apparent changes to any of the previous indications, and no new recordable indications.
Steam Dryer (GE SIL-644, GEH reinspection recommendations, and BWRVIP-139) (continued)	04/12	Best Effort GV, EVT-1, VT-1, VT-3	Visually examined the Steam Dryer OD per BWRVIP-139-A and GEH recommendations for replacement dryers, including all previous indications. There were no apparent changes to any of the previous indications. One new recordable indication was noted on a previously repaired base plate guide; this appears to be associated with the repair installation. Evaluated as acceptable for the next cycle as is.
	04/14	EVT-1	Inspected SD-BA-TEE BRACE-OD and SD-BF-TEE BRACE-OD with NRI
		VT-3	Inspected SD-SKT-BP-Guide-03-OD, SD-SKT-BP-Guide-05-OD and SD-SKT-BP-Guide-06-OD with RI, but no changes from past inspections
	03/16	EVT-1	Inspected SD-BA-TEE BRACE-OD and SD-BF-TEE BRACE-OD with NRI
	03/18	Best Effort GV, EVT-1, VT-1,	Visually examined the Steam Dryer OD per BWRVIP-139-A and GEH recommendations for replacement dryers,

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		VT-3	including all previous indications. There were no apparent changes to any of the previous indications, and no new recordable indications.
Access Hole Covers (BWRVIP-180)	05/92	VT, UT	IGSCC observed adjacent to welds in both AHCs. Mechanical repairs made.
	11/94	VT, UT	UT performed during installation of permanent mechanical repair that replaced the first repair.
	03/04	VT-1	No recordable indications.
	03/10	VT-1	No recordable indications.
	03/18	VT-1	Inspected both access hole covers. No recordable indications.
Dissimilar Metal Welds (BWRVIP-75-A Cat. A)	03/08	UT	Examined 7 Category A welds per BWRVIP-75 and ASME Section XI, Appendix VIII, Supplement 10. No flaws were identified and no weld overlays were performed. 100% of the required exam volumes were inspected on all of the welds. Three of the exams were manual. Four welds contained a stainless steel inlay. Automated exams were performed on those four welds.
	03/10	N/A	
	03/16	N/A	No Category A DM welds examined
	03/18	UT	No Category A DM welds examined Four Category A dissimilar metal welds inspected with NRI.
Dissimilar Metal Welds (BWRVIP-75-A Cat. B)	03/08	N/A	No Category B DM welds examined – Quad has no Category B DM welds
Dissimilar Metal Welds (BWRVIP-75-A Cat.	03/08	UT	Examined 4 Category C welds per BWRVIP-75 and ASME Section XI, Appendix VIII, Supplement 10. No flaws

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C)			were identified and no weld overlays were performed. 100% of the required exam volumes were inspected on all of the welds. Three of the exams were manual and one was automated. One weld contained Alloy 82/182 butter, which was also the weld on which the automated exam was performed.
	03/10	UT	Examined 4 Category C welds per BWRVIP-75-A and ASME Section XI, Appendix VIII, Supplement 10. No flaws were identified and no weld overlays were performed. 100% of the required exam volumes were inspected on all of the welds. Two of the exams were manual and Two were automated phased array. One of the automated exams was on a weld containing Alloy 82/182 butter. This last exam completes the requirements for BWRVIP-222.
Dissimilar Metal Welds (BWRVIP-75-A Cat. D)	03/08	N/A	No Category B DM welds examined – Quad has no Category D DM welds
Cast Austenitic Stainless Steel (CASS)	04/12	EVT-1	Visually examined CASS components on the following per NRC LR commitment: JP 20 • JP Mixer Flange • JP Mixer Flare • JP Mixer Ring • JP Inlet-Mixer Nozzle • JP Inlet-Mixer Elbow CRD Cell 58-35 • Fuel Support Piece • CRGT Base No recordable indications
	04/14	EVT-1	Inspected 7 CASS components on JP14 and CRD Cell 54-31 with NRI
	03/16	EVT-1	Inspected 5 CASS components on JP11

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			and 2 CASS components on CRD Cell 30-31 with NRI
Steam Separators	04/12	UT	Volumetrically examined all 45 original SHBs. All earlier "suspects" had NRI and are resolved. All others NRI
		VT-3	Visually examined all of the gussets at the upper and middle support rings per station augmented inspections. Re-inspected indications on two gussets identified in Q2R18. No apparent changes. Both gussets were determined to be acceptable for use.
	04/14	VT-3/VT-1	Visually examined all 48 SHB's per SIL 433 & 650. Some Alignment pins and windows have minor wear evaluated acceptable for further use. Otherwise NRI
	03/16	VT-3/VT-1	Re-inspected indications on two gussets identified in Q2R18. No apparent changes.
	03/18	UT	Re-inspected indications on two gussets first identified in Q2R18 and standpipe damage at 180°; RI again, but no apparent changes.
		VT-3	Volumetrically examined all 45 original SHBs with NRI.
		VT-1	Visually examined all 48 SHB's per SIL 433 & 650. Some Alignment pins and windows have minor wear evaluated acceptable for further use.
			Re-inspected indications on two gussets first identified in Q2R18 and standpipe damage at 180°; RI again, but no apparent changes.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	1993	VT-1 and UT	7 RFO (Fall 93), (VT-1) the OD of H3, H4, and H5, and the corresponding vertical welds in the 0 to 135 degree azimuth. No Recordable Indications.
	1995	UT	8 RIO (Spring 95), circumferential welds H1 through H7 inspected ultrasonically using GE OD Tracker system. Cracking found in H1, H2, H4, H5, H6A, and H6B. Most significant in degrees of cracking were H2), H4), H5), and H6B). Structural margins were maintained based on BWRVIP documents GENE-523-113- 0894, Rev 1, and Supplement 1, Rev 1, and independent calculations.
	1996	UT	9 RIO (Fall 96), partial ultrasonic inspection of shroud ultrasonically for crack growth information using the OD Tracker. Weld areas inspected were H1, H2, H4, H5, and H6B. Structural margins were maintained based on BWRVIP documents GENE-523-113-0894, Rev 1, and Supplement 1, Rev 1, and independent calculations.
	1998	UT	Unit 1 10 RIO (Spring 98), Partial UT examinations of the H4 and H5 welds were made in the 0 and 180 degree azimuth locations previously uninspected. On the H4 weld 3 new indications were found. The H5 weld did not have any indications in the inspected region.
	1998	VT-1 Enhanced	Unit 1 10 RIO The vertical weld designated H5/H6A-135 was visually inspected on the OD for 41" and on the ID for 24" on both sides of the weld. No Recordable Indications.

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	2000	UT	Unit 1 11 RIO (Spring 2000) Horizontal welds H4 and H5 were re-examined using the TEIDE tool from Spain. Full 360 degree UT examination revealed 60.3% of H4 cracked and 47.1% of H5 cracked, mostly on the ID of the shroud. Safety margins were calculated for each weld and analysis showed 6 years of useable life for the H4 weld and 10 years for the H5 remained before reinspection required using BWRVIP-76 techniques.
	2000	UT/VT-1E	Unit 1-11 RIO (Spring 2000) vertical welds: Seven (7) vertical welds were examined using either UT or VT- 1/1E techniques selected using BWRVIP criteria. One weld, V-15 @ 180 degrees between H4/H5 welds, showed a small defect 0.94" long and 0.37" deep. This weld met safety limits, but would have to be reinspected in 6 years.
	2004	UT	Unit 1 13RIO (Spring 2004) circumferential welds H1, H2, H3, H4, H6A, H6B, and H7 inspected ultrasonically using GE OD Tracker system. Additional cracking found in H1, H2, H4, H6A, and H6B. Most significant in degrees of cracking were H7), H4(, and H6A. Structural margins were maintained based on BWRVIP documents and independent calculations.
	2006	EVT-1	U1 -14RIO EVT-1 single sided exam of vertical welds per BWRVIP-76. No Recordable Indications.
	2006	VT-3	Shroud flange exam 120 degrees of circumference to satisfy ASME XI core support structure. No Recordable Indications.

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	2008	VT-3	Shroud flange exam additional 120 degrees of circumference to satisfy ASME XI core support structure. No Recordable Indications.
	2010	UT	16RIO Ultrasonic exam of Horizontal Welds H1, H2, H3, H4, H5, H6a, H6b, H7 Ultrasonic exam of 10 Vertical Welds. Increase in crack length on all horizontal welds. Between 1% and 6% additional cracking. Minor increase in crack length in V6 weld. 0.94" in 2000 4" in 2010 New Flaw in V4 2.3" All welds acceptable for 10 years
	2014	VT-3	VT-3 of Shroud H7 weld to satisfy ASME XI.
Shroud Support	1993	VT-1	Unit 1 7RIO Shroud Support legs inspected in 1993 during Jet Pump Beam replacements. No Recordable Indications. VT-1 of 0 deg to 360 deg of H8 and H9 during the first interval. No Recordable Indications.
	1995	EVT-1	Unit #1 8 RIO (Spring 95), H8 and H9 examined (enhanced VT-1) for 360 deg of accessible area. No Recordable Indications.
	1996	EVT-1, UT	Unit #1 9 RIO (Fall 96), 18 inch indication found behind AHC at 180 deg at the shroud support horizontal plate to shroud cylinder plate weld H8 while performing AHC inspections. UT performed of the accessible areas of the indication. Inspected (enhanced VT-1) remaining accessible areas of H8 and 360 deg of accessible H9 without any additional recordable indications. Structural margins were maintained.

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	1998	UT	10-RIO (Spring 98) the H9 weld was inspected 100% from the OD of the vessel and No Recordable Indications. The H8 weld was inspected over 10.21% or 64.4" of the circumference from the OD of the vessel and No Recordable Indications.
	1998	EVT-1	EVT-1 examinations were performed on shroud weld H8 at 180 deg. to verify a previously noted crack adjacent to the Access Hole Cover. The indication was determined to be non-relevant due to dark grit built up at the weld toe.
	2004	VT-1	13 RIO (Spring 2004) AHC at 0 and 180 degrees. No Recordable Indications.
	2004	VOL/VT-3	H9 inspected from vessel OD 31% For VIP-38. No Recordable Indications.
	2004	EVT-1/VT-3	H8 inspected 25% per VIP-38 and ASME XI. No Recordable Indications.
	2004	VT-3	Shroud support legs and welds, all 13 per VIP-38 with GE remote Firefly inspection tool. No Recordable Indications.
	2008	EVT-1/VT-3	15 RIO AHC at 0 and 180 degrees. No Recordable Indications in 180 degree Top Hat design. Approximely .070 inch radial IGSCC crack in 0 degree in weld HAZ into cover plate. Use-As-Is
	2010	EVT-1	16RIO AHC at 0 degrees of existing IGSCC indication. No growth noted.
	2010	EVT-1/VT-3	H8 inspected 25% per VIP-38 and ASME XI. No Recordable Indications.
	2012	EVT-1	17RIO EVT-1 of AHC at 0 degrees of existing IGSCC indication. No growth noted.

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	2012	VT-3	VT-3 of Underside of H8 and H9 welds and Baffle Plate when access to below core plate was available during JP main wedge replacement. No Recordable Indications. VT-3 of 9 shroud support legs and welds during JP main wedge replacement. No Recordable Indications.
	2014	UT	18RIO H9 Inspected 100% of the weld length from Reactor Vessel OD and found No Recordable Indications
	2014	VT-3	H9 VT-3 of weld for ASME XI acceptance. No Recordable Indications.
	2014	EVT-1	ACCESS HOLE COVER 0 DEGREES. No growth from previous IGSCC indication discovered in 2008.
	2016	EVT-1, VT-3	EVT-1 and VT-3 of 180 deg access hole cover and H8. No Recordable Indications.
Core Spray Piping	1980's to 1995	VT-1, VT-3	Piping and welds in annulus. No Recordable Indications.
	1996	VT-1 enhanced, UT	9 RIO Inspect per BWRVIP-18, no relevant indications though one indication was ultrasonically examined and no depth was recorded.
	1998	VT-1E and VT-3	10 RIO Inspect per VIP –18. No Recordable Indications.
	2000	EVT-1	11 RIO Inspect per VIP –18. No Recordable Indications.
	2002	UT & EVT-1	12 RIO (spring 2002) Inspect per VIP-18. No Recordable Indications.
	2004	EVT-1	13 RIO Inspect per VIP –18, for welds that cannot be inspected by UT P8A, P4D, P4A. No Recordable indications were observed
	2006	UT	14RIO Inspect per BWRVIP-18A, UT 23 welds, P2, P3, P5, P7, P4a, P4b, P4c. No Recordable Indications.

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	2006	EVT-1	EVT-1 for 9 welds without an approved UT method, P4d, P8a, P8b. No Recordable Indications.
	2006	VT-1	VT-1 of Core Spray Brackets (8) No Recordable Indications.
	2008	EVT-1	15 RIO EVT-1 of Core Spray piping per BWRVIP-18A. All P2, P3, P8a, and P8b welds. One each P4c and P4d. No Recordable Indications.
	2010	EVT-1	16 RIO EVT-1 of 41 Core Spray piping welds per BWRVIP-18 Rev. 1. All P2, P3, P5, P6, P7, P8a, P8b welds. Selected P4 welds. Junction Box OD exam for P1 locations. No Recordable Indications.
	2010	VT-1	VT-1 of 4 Core Spray Brackets. No Recordable Indications
	2012	EVT-1	17 RIO EVT-1 of 28 Core Spray piping welds per BWRVIP-18 Rev. 2. All P2, P3, P5, P6, P7, P8a, P8b welds. One P4C weld. Thermal sleeve T-Box OD exam for P1 locations. No Recordable Indications.
	2014	UT	18RIO UT of 40 Core Spray Piping Welds included all P1, P2, P3, P4a- c, P5, P6, P7, P8a,b. No Recordable Indications. P6 weld at 007 degrees was confirmed to be non-Relevant, previous exam noted a gouge that was not thoroughly investigated.
	2014	EVT-1	EVT-1 of 28 Core Spray Piping welds which received a one-sided UT exam. This included all P1, P2, P3, P4d, P8a and P8b welds. Also P6 at 007 degrees to confirm no defect. All exams No Recordable Indications.
	2016	EVT-1	EVT-1 of all P1, P2, P3, P8A and P8B. No Recordable Indications.
	2018	EVT-1	EVT-1 of 4 P4Ds, P6, P7, No Recordable Indications.

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Core Spray Sparger	1980's to 1995 1996	VT-1, VT-3	No recordable indications, but one indication found in 1985 on S2, 173 degrees was identified. 9RIO Inspect per BWRVIP-18. Cracking found visually on shroud ID at #4 Core Spray Support Bracket. Determined acceptable to Use-as-is.
	2000	EVT-1	11 RIO – No Recordable Indications.
	2002	EVT-1	12 RIO – Linear indication core spray sparger tee box S2 weld @173 degrees. This was the same indication identified in 1985. It was evaluated for use as is since it did not grow in size over 17 years.
	2004	EVT-1, VT-1, UT	13 RIO – VT-1 8 sparger brackets. Cracking at Bracket 04 on shroud side inspected for sizing by UT and analyzed per VIP-76 vertical weld criteria. Determined acceptable to Use-as-is.
	2006	EVT-1	14 RIO EVT-1 of sparger piping both loops, S1, S2, and S4. No Recordable Indications. S2 weld at 173 degrees inspected, no growth noted. VT-1 of 50% of sparger welds S3a, S3b, S3c, S4. One of three tack welds found cracked during S3a inspection in orifice to elbow. Per GE analysis only two are required for structural integrity. VT-1 of five sparger brackets. Six sparger brackets, SB01 through SB06. Visual re-inspection of SB04 to verify no visible growth in shroud side crack.

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	2008	EVT-1, VT-1	15RIO VT-1 of six sparger brackets original scope. Bracket 11 Cracked approximately 1 inch in length on shroud side of bracket observed. Determined acceptable Use-as-is. Scope expanded to the six brackets inspected in 2006. No growth observed in SB04 reinspection. No Recordable Indications in all remaining brackets.
	2010	EVT-1, VT-1	16RIO EVT-1 of 20 Core Spray Sparger Welds (S1, S2, S4). 40 exams – No Recordable Indications. S2 exam one 1.5" IGSCC crack minor growth observed. VT-1 of 50% of S3a and S3b Nozzle Welds. Two cracked tack welds discovered during S3a and S3b exams.
	2012	EVT-1, VT-1	17RIO S2 exam one 1.5" IGSCC crack no growth since discovery in 1985. EVT-1 of 3 Sparger Brackets with shroud side IGSS indications. Growth noted in SB11. VT-1 of remaining 9 Sparger Brackets, No Recordable Indications.
	2014	EVT-1, VT-1	18RIO EVT-1 of 20 Core Spray Sparger Welds (S1, S2, S4). 40 exams – No Recordable Indications. S2 exam one 1.5" IGSCC crack no growth since discovery in 1985. VT-1 of 50% of S3a, S3b and S3c Nozzle Welds. Two cracked tack welds discovered during S3a and S3b exams
	2016	VT-1	New growth/defects on core spray sparger brackets 03, 11. Use as is

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	2018	EVT-1, VT-1	EVT-1 of two S2, VT-1 of eight Header Brackets and two Sparger Sup Welds. Small change to wear on two Header Brackets. No change to Sparger Sup Welds. No change to indication on D-S2-Right.
Core Plate (Rim, etc.)	2004	VT-3	13 RIO VT-3 of Core Support Plate Bolts and Tack welds from under- side with GE Firefly remote tool. No Recordable Indications.
			VT-3 of Core Plate surfaces and welds during CRGT inspections. Satisfy VIP-25 and ASME XI. No Recordable Indications.
	2008	VT-3	15RIO VT-3 of Core Plate surfaces and welds during CRGT inspections. Satisfy VIP-25 and ASME XI. No Recordable Indications.
	2010	VT-3	16RIO VT-3 of 7 Core Plate surfaces during CRGT inspections. Satisfy ASME XI. No Recordable Indications.
SLC	1992	VT-3	SLC 6 RIO One side of the Standby Liquid Control Standpipe inspected. Disassembly of the jet pumps for a Power Uprate modification made inspection possible. No Recordable Indications.
	2002-2016	EVT-2	Enhanced VT-2 during vessel post outage leak check. No Recordable Indications.
Top Guide	2008	EVT-1	15RIO EVT-1 of one Top Guide
			location to satisfy BWRVIP-26A.
			No Recordable Indications.
	2010	EVT-1	16RIO EVT-1 of 9 Top Guide
			locations to satisfy BWRVIP-183
			initial selection of 5%. No
			Recordable Indications.

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	2014	EVT-1	18RIO EVT-1 of 9 Top Guide locations to satisfy BWRVIP-183 continued selection of an additional 5%. No Recordable Indications.
	2014	VT-3	VT-3 of four C-Clamps per ASME XI requirements. 180 degree C- Clamp had a Recordable Indication attributed to IGSCC of 0.25 inches in length.
	2016	VT-3, EVT-1	EVT-1 of indication on 180 deg C-Clamp, no growth. VT-3 of four C-Clamps.
	2018	EVT-1	EVT-1 of indication on 180 deg C-Clamp, no growth. EVT-1 of 9 Top Guide Beams, No Recordable Indications.
Jet Pumps	93-96	VT-1, VOL, VT- 3	Riser brace welds inspected every other outage. Jet pump beam volumetric exams once in ten years. Remaining components (welds (VT-1), set screws (VT-3), wedges (VT-3), sensing line clamps (VT-1 & VT-3), tack welds (VT-1), etc are once per period. Jet pump beams replaced.
	1993	VT-1M	7 RIO Beams replaced. Non- rejectable gaps in set screws reported over several outages.
	1998	VT-1 & EVT-1	10 RIO Jet Pumps 11-20 were inspected per BWRVIP-41 guidelines. No Recordable Indications.
	2000	VT-1 & EVT-1	11 RIO Jet pumps 01, 02, 03, and 04 inspected per BWRVIP-41. No Recordable Indications.

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	2002	VT-1 & EVT-1	12 RIO Jet Pumps 05, 06, 11, and 12 inspected per BWRVIP-41, all jet pump set screw gaps measured, all wedges inspected. Excessive set screw gaps on JP–02 (shroud side set screw), JP-11 (shroud side set screw), JP-12 (shroud and vessel side set screws), JP-13 (vessel side set screw), JP-17 (shroud and vessel side set screws), and JP-20 (shroud side set screw). A total of eight auxiliary spring wedges installed. in the above listed jet pumps. Additional riser brace inspections were performed on JP-02, 11, 12, 13, 17 and 20. No Recordable Indications.
	2004	UT	13 RIO UT of all 20 Jet Pump Beams, BB-1, BB-2 only. No Recordable Indications.
	2004	EVT-1	EVT-1 of remainder of VIP-41 high priority welds, AD-1, AD-2 RS-1, RS-1A, RS-2, RS-3. No Recordable Indications.
	2004	VT-1	VT-1 of jet pump wedges and set screw gaps pre-modification and post-modification. All 20 jet pump inlet mixer labyrinth seal EDM machining. New oversized wedges and wedge rods installed on 5 pumps. Auxiliary wedges installed in 3 set screws with excessive gaps after modification.

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	2006	VT-1	14 RIO VT-1 of all 20 Jet Pump wedges following inlet mixer labyrinth seal modification and VT-3 of modification hardware. Minor wear and movement found in several wedge rods and minor wear in two wedges. One wedge required expanded BWRVIP-41 exams due to wear. No set screw gaps or damage found. Expanded scope N2A JP01 RS6, RS7, MX-7 AS-1, AS-2. No Recordable Indications.
	2006	EVT-1	EVT-1 of selected JP welds 2 each RS-1, RS-2, and RS-3 for second inspection cycle for High Priority welds and continued with Medium priority weld inspections for selected IN-4 4 welds, RS-8 and RS-9 welds 2 each. No Recordable Indications N2D and N2G Riser brace welds RB-1 a-d and RB-2 a-d. No Recordable Indications.
	2008	UT	15 RIO UT of all 20 Jet Pump Beams, BB-1, BB-2, and BB-3. No Recordable Indications. UT of Jet Pump Diffuser Welds. All 20 jet pumps UT of AD-1, AD-2, DF-1, DF-2, and MX-2 welds. No Recordable Indications.
	2008	EVT-1	EVT-1 of Jet Pump Medium and High priority welds. N2 F Riser welds RS-1, RS-1a, RS-2, and RS-3 High priority welds 3 each. N2D, N2E, N2G, and N2 H Riser Medium priority welds 6 each RS-6 and RS- 7 welds 8 each and N2H riser RB1a-b and RB2-a-b welds. No Recordable Indications.

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	2008	VT-1	VT-1 of all 20 wedges WD-1 exams, one set screw AS-2 exam. Five jet pumps with previous wedge wear, no increase in wear noted, two jet pumps newly discovered wear this outage. Twelve jet pumps with previous wedge rod wear inspected, increase in wear noted in 4 jet pumps, newly discovered wear in one jet pump. Set screw on JP01 minor wear into bellyband. Three additional wedges showed minor rod wear.
	2010	EVT-1	16RIO EVT-1 High priority RS1, RS2, RS3 welds at two risers. RS6, RS7, IN4 welds at four jet pumps RB1a-d RB2a-d at two risers. All RS8 and RS9 welds per BWRVIP-41. Maximum weld coverage.
	2010	VT-3	VT-3 Inspection of Jet Pump Sensing Lines and associated supports and welds in response to 2009 Unit 2 indication of movement of sensing line clamps. Sensing lines for 15 jet pumps inspected. 14 of 15 are jet pumps without clamps. JP20 inspected due to higher signal noise levels in this jet pump. No service induced defects were discovered. One indication attributed to a cutting tool was discovered and determined to be acceptable.

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	2010	VT-1	VT-1 of all Jet Pump Wedge WD-1 exams completed. 18 of 20 had prior rod or wedge wear. Five Jet Pumps had significant additional wedge and rod wear. Five Jet Pumps had additional minor rod wear. Eight Jet Pumps had no change in wedge or rod wear. Two continue to have no wedge or rod wear. Wedge movement noted on three jet pumps.
	2010	EVT-1	Scope expansion for 14 of 20 jet pumps. No cracking observed in EVT-1 weld exams RS6/RS7, VT-3 of MX7. No Recordable Indications.
	2010	VT-1	Jet Pump AS1 exams revealed significant set screw gaps and set screws digging into belly band. Set screw gaps observed in following locations: JP04VS 3 mils JP08SS 68 mils JP12SS 96 mils JP12VS 97 mils JP14VS 73 mils JP14SS 77 mils Set screw digging into belly band at 14 locations.
	2010	EVT-1	EVT-1 - Set screw gaps greater than 58 mils requires RB-1and RB2 exams. RB1a-d / RB2a-d EVT-1 exams performed on three risers due to gaps on JP08, JP12, and JP14. All exams No Recordable Indications

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	2010	VT-1	Modifications - Auxiliary Spring Wedges Installed at following locations due to set screw gaps or wedge movement: JP03VS JP04SS VS JP07VS JP08SS JP12SS VS JP14SS VS JP17SS Slip Joint Clamps were installed on Jet Pumps JP04, JP12, and JP14 due to the extent of wedge wear and movement
	2012	EVT-1	17RIO EVT-1 original scope at two jet pump pairs, JP11/12, JP13/14 RB1a-d, RB2a-d, RS8, and RS9. JP11/12 RS9 two small weld shrinkage cracks observed, not service induced. No Recordable Indications in remaining welds. Due to replacement of six Jet Pump wedges and observed set screw gaps, additional RB1, RB2, RS8, and RS9 scope expansion for six jet pump pairs. No Recordable Indications.
	2012	EVT-1 / VT-3	Additional scope expansion EVT-1 of RS6 and RS7 welds and VT-3 of MX-7 welds for JP02, JP04, JP08, JP11, JP12, JP14, JP9, JP16, and JP18. No Recordable Indications. Additional weld scope expansion for main wedge replacement jet pumps JP02, JP04, JP08, JP11, JP12, and JP14. EVT-1 of OD AD1, AD2, DF1, DF2 at these jet pumps and RS3 at associated JP pairs. Also AD1, AD2 VT-3 exam of ID during replacement. EVT-1 of IN4 and MX2 exams on JP02 due to more extensive set screw damage. All exams No Recordable Indications.
	2012	VT-3	VT-3 of the six installed original Power Up-Rate jet pump sensing line clamps. No Recordable Indications.
	2012	VT-1	VT-1 exam of all accessible jet pump AS1 locations, those not obscured by

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			auxiliary wedges. Set screw gaps and digging into belly band observed at following locations. Gaps: JP02VS 93.3 mils JP09SS 69.9 mils JP09VS 5.6 mils JP16SS 5.9 mils JP16VS 65.9 mils JP18VS 58.9 mils Set Screw Wear into Belly Band: JP01SS New Indication JP02 SS New Indication JP04SS New Indication JP04VS New Indication JP06SS New indication JP07SS Growth of previous wear JP08VS Growth of previous wear JP11SS New Indication JP12SS Growth of previous wear JP13SS Growth in previous wear JP13VS Growth in previous wear JP14SS New Indication JP15VS New Indication JP17SS New Indication JP18SS New Indication JP20SS Growth in previous wear JP20VS New Indication
	2012	VT-1	VT-1 of set crew AS2 tack weld exams performed at all accessible tack welds, two additional cracked tack welds were discovered at JP14SS and JP01SS. Use-As-Is.

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	2012	VT-1	VT-1 of previously existing 14 auxiliary wedges. JP04SS, VS, JP12SS VS and JP19VS No Recordable Indications. Over travel and wear found at JP02SS, JP06VS, JP20VS, JP07VS, JP08SS, and JP14VS. Over travel found at JP03VS, and JP17SS. Due to condition of auxiliary wedges and removal of auxiliary wedges for main wedge replacement, original auxiliary wedges were not reused and new auxiliary wedges were installed at: JP03VS JP04SS VS JP06VS JP07VS JP12SS VS JP14SS VS JP17SS JP20VS
	2012	VT-1	No Recordable Indications during baseline exams expect for JP02VS and JP17SS. They showed wedges were not centered and arms not in contact with restrainer bracket. Use-As-Is. Damage to the set screws from the aux wedges wearing into the set screws were observed on all the above locations during inspections when the auxiliary wedges were removed. Use-As-Is. Modifications - Auxiliary Spring Wedges Installed at following locations due to set screw gaps or wedge movement and wear: JP02 VS JP08 VS JP09 SS VS JP11 SS VS JP13 SS VS JP16 SS VS JP18 VS JP20 SS Baseline exam revealed No Recordable Indications.

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	2012	VT-3	VT-3 exams of Slip Joint Clamps after one outage showed gap at middle clamp interface for JP12 and JP14. JP04 No Recordable Indications. Clamps were removed for main wedge replacement. Baseline after reinstallation showed No Recordable Indications. Slip Joint Clamps were installed on remaining 17 jet pumps that did not have clamps installed in 2010 – JP01, JP02, JP03, JP05, JP06, JP07, JP08, JP09, JP10, JP11, JP13, JP15, JP16, JP17, JP18, JP19, and JP20. No Recordable Indications for Baseline exams.
	2014	EVT-1	18RIO EVT-1 of scheduled Jet Pump welds, 9 Draw Bead Locations, 1 DF1 Arc Strike investigation, 4 IN4, 8 RS1, 4 RS2, 3 RS3 RB1a-d, RB2a-d at three Riser Braces, N2C, N2D, and N2K. RS6 and RS7 welds at JP5, JP6, JP19, and JP20. All 10 RS8 and 10 RS9 welds for all 10 Riser Brace Locations. JP11/12 RS9 two small weld shrinkage cracks observed, not service induced, No growth from 2012. All other inspections, No Recordable Indications.
	2014	EVT-1	Scope expansion EVT-1 exams for RS6 and RS7 welds JP03, JP07, JP09, JP10 JP13, JP14
	2014	VT-3	Scope expansion VT-3 MX7 welds JP03, JP07, JP09, JP10 JP13, JP14
	2014	UT	UT of all AD1, AD2, DF1, DF2 and MX2 welds, 100 total. No Recordable Indications.
	2014	UT	UT of 19 of 20 Jet Pump Beams. No Recordable Indications. JP02 beam replaced in 2012, not due for exam.

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	2014	VT-3	VT-3 of 6 Jet Pump Sensing Lines. One non-service induced indication showed no change.
	2014	VT-1	VT-1 of all 20 jet pump wedge WD1 exams. Additional Rod and Wedge wear identified on 17 of 20 main wedges JP01 New rod wear and restrainer bracket wear. JP02 New rod and wedge wear JP03 New rod and wedge wear, significant movement downward. JP04 New wedge wear JP05 JP06 No change from 2012. JP07 New rod wear. JP08 New rod and wedge wear JP09 New rod and wedge wear. JP10 New rod wear new wedge movement downward. JP11 New rod wear. JP12 New rod and wedge wear. JP13 new significant rod wear and wedge wear. JP14 New rod and wedge wear. JP15 Drop in wedge noted. JP16 No change from 2012. JP17 New rod wear. JP18 New rod and wedge wear. JP19 New rod wear. JP20 New rod and wedge wear.
	2014	VT-1	VT-1 of Set Screw AS1 and AS2 exams. A total of 18 Recordable Indications. No change in condition of JP11-20 indications. Additional cracked tack welds, AS2 JP02 SS, JP03 SS, JP07SS. Additional wear noted in set screws during auxiliary wedge removal for JP03VS, JP04SS, JP07VS.
	2014	VT-1	VT-1 of previously installed auxiliary spring wedges. JP02VS, JP08VS No Recordable Indications. JP03VS New wedge wear and over travel

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			JP04VS Aux wedge not centered on set screw and new wear. JP06VS New belly band wear JP07VS New restrainer bracket and belly band wear, over travel. JP09VS Aux wedge not centered over set screw. JP09SS New wear into set screw and restrainer bracket, and not centered over set screw. JP11SS, JP12SS, JP13SS/VS, JP19VS, JP20SS/VS No Recordable Indications for previously installed wedges. JP14SS No change in condition of wear in belly band. JP11VS New wear between wedge bearing surfaces. JP12VS New over travel on wedge fingers. JP16SS New wear into Restrainer Bracket, no contact on underside with belly band. JP18VS New wear into restrainer bracket, aux wedge not centered over set screw.
	2014	VT-3	VT-3 of Slip Joints. Gaps noted on JP01 through JP10. Blow by noted on JP05 and JP06. Gaps noted on Slip Joints JP12, JP13, JP16, JP18, and JP19. Blow by at JP12.
	2014	VT-3	VT-3 Overview of Rams Head showed Blow by between JP02 and JP03, JP03 and JP04 JP07 and JP08 JP13 and JP14
	2014	VT-3	VT-3 of all 20 Slip Joint Clamps. JP03 Collar wear JP08 Middle Guide Gap JP12 Middle Guide Gap, Middle Guide strut wearing into Diffuser Collar. JP18 Middle guide not in contact with clamp.
	2014	VT-1 / VT-3	

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			Modifications performed during the outage, planned and emergent items: Replace 2 Jet Pump Beams with non-welded Ratchet beams, JP03, JP07. Replacement of 8 Slip Joint Clamps on JP02, JP03, JP04, JP07, JP08, JP12, JP14, JP18. Reseat Slip Joint Clamps on JP09 and JP10. Increase Slip Joint Clamp Preload on 14 Jet Pumps, JP01, JP02, JP03, JP04, JP07, JP08, JP09, JP10, JP12, JP13, JP14, JP17, JP18, JP20 Install Anti Vibration System, AVS, on 6 Jet Pumps, JP01, JP03, JP04, JP07, JP13, JP14 Remove 8 auxiliary spring wedges for Jet Pumps with new AVS, JP03VS, JP04SS/ VS, JP07VS, JP13SS/VS, JP14SS/VS Remove/reinstall 7 auxiliary wedges to support AVS installation, JP02VS, JP08VS, JP09SS/VS, JP12VS/SS, JP18VS.
	2016	VT-3, VT-1, EVT-1	The scope of visual inspections for jet pumps components consisted of all main wedges, all accessible set screws, all installed aux wedges, all slip joint clamps, all AVS, and all riser brace welds RS8 and RS9's. 13 out of 20 main wedges had either movement, new wear or both. 6 new relevant indications were found on the Set screws during inspections. 9 Aux Wedges had new relevant indications. 10 Slip Joint clamps had new relevant indications. 3 Slip Joint Clamps had work/replacement in preload increase on JP2, JP16, and JP19. Indication on JP20 Sensing line clamp. 0 relevant indications were found on AVS. 3 more AVS systems were installed on JP2, JP12, and JP 20 along with 5 aux wedges removed. 0 jet pump hold down beams were replaced. There

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			was scope expansion due to Single Loop Operation on MX-7, RS-6, RS-7, RB1s, and RB2s on the A Loop; no relevant indications observed.
	2018	VT-3, VT-1, EVT-1	The scope of visual inspections for jet pumps components consisted of all main wedges, all accessible set screws on non AVS pumps, all slip joint clamps, all AVS hard Stops, some AVS C-Stops, one Sensing Line Clamps, all RS8, RS9s, 6 AD1s, 6 AD2s, 6 DF2s, 2 IN4s, 3 RS1/RS1-A, 3 RS2, 3 RS3, 10 RS6s, 10 RS7s. 9 Main Wedges had new wear or movement or both. No change to all set screws inspected. 2 Aux Wedges had additional wear. 9 Slip Joint Clamps had new or new additional wear. 2 AVS hard stops had movement. No apparent change to non-service induced indication on N2F RS9. No change to JP20 Sensing line clamp. 4 Diffuser Ring mod's installed. 1 Slip Joint Clamp replaced. 1 Aux Wedge replaced.
LPCI Couplings			Not applicable to this plant
Lower Plenum Components CRD Guide Tubes	2002	EVT-1 and VT-3	12 RIO, inspected 4 guide tubes, CRGT-1, 2, and 3 per BWRVIP-47. No Recordable Indications.
	2004	EVT-1 and VT-3	13 RIO inspected 6 guide tubes, CRGT-1, 2, and 3 per BWRVIP-47. No Recordable Indications.
	2008	EVT-1 and VT-3	15 RIO inspection of 2 guide tubes, CRGT-1, 2, and 3 per BWRVIP-47. No Recordable Indications.
	2010	EVT-1 and VT-3	16 RIO inspection of 7 guide tubes, CRGT-1, 2, and 3 per BWRVIP-47. No Recordable Indications.

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	2016	UT	During U1 forced outage in 2016 LPRM had IGSCC crack undervessel, weld overlay performed, UT performed
	2018	UT	UT performed on weld overlay, NRI
Guide Tubes Below Core Plate	2004	VT-3	13 RIO VT-3 of 40 Guide Tubes OD with GE Firefly remote inspection tool when lower plenum made available by Jet Pump mod. No Recordable Indications.
	2012	VT-3	17RIO VT-3 of 16 Guide Tubes OD during JP main wedge replacement. No Recordable Indications.
Stub Tubes	2004	VT-3	13RIO VT-3 of 40 Stub Tubes with GE Firefly remote inspection tool when lower plenum made available by Jet Pump mod. No recordable indications.
	2012	VT-3	17RIO VT-3 OF 16 Stub Tubes during JP main wedge replacement. No Recordable Indications.
Dry Tubes	2004	VT-3	13 RIO VT-3 for gross damage only for 6 of 12 dry tubes. Remaining 6 dry tubes were replaced.
	2006		Replaced 6 dry tubes that weren't already previously replaced in 2004.
Instrument Penetrations	1985-2018	VT-2	VT-2 exams during RPV pressure test each outage. No Recordable Indications.
Vessel Brackets		VT-1 and VT-3	1989 ASME Section XI inspections of jet pump riser brace, dryer, feedwater brackets, core spray header brackets, and surveillance capsule holder brackets, performed once per interval. Unit #1 Dryer Support Block C replaced due to fatigue cracking. "Measurable but acceptable wear"

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	1998	VT-3	10RIO VT-3 Examinations were performed on the dryer hold down bracket attachment welds located at 138 and 221 degrees. No Recordable Indications. VT-3 Examinations were performed on the dryer support brackets and attachment welds located at 4, 94, 184 and 274 degrees. No new indications were observed. Previously recorded wear on support lug "D" at 274 deg. was verified and no additional wear noted.
	2000	EVT-1	11 RIO Core spray piping and sparger brackets, feedwater sparger brackets, and dryer support brackets. No Recordable Indications.
	2002	VT-3 and EVT-1	12 RIO. Core spray piping and sparger brackets examined, dryer support bracket, and surveillance sample holders. Some measurable wear on "D" dryer support bracket was noted.
	2004	VT-3 and EVT-1	13 RIO Jet pump riser support welds, Dryer support brackets, no additional wear noted on "D" dryer support bracket, guide rod bracket, dryer hold down bracket, Core spray brackets for ASME XI with No Recordable Indications.
	2006	VT-3 and EVT-1	14RIO Jet Pump riser support welds, Core Spray Bracket pad to vessel welds, guide rod bracket and surveillance specimen attachment welds. No Recordable Indications.

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	2008	VT-3 and EVT-1	15RIO All four steam dryer support brackets were polished smooth and level by the EDM process to create a level surface for the new steam dryer to rest on. Minor wear on two brackets was observed. The 274 degree bracket had pronounced wear pattern prior to EDM. Post EDM all bracket seating surfaces were level with no sign of wear. No Recordable Indications.
	2010	VT-1, VT-3, EVT-1	16RIO EVT-1 of 4 Jet Pump riser brace pad to RPV, 4 Feedwater sparger brackets to RPV wall. No Recordable Indications. VT-3 of 4 Core Spray Brackets, 4 Steam Dryer Hold Down Brackets, 1 Surveillance Specimen Bracket. No Recordable Indications. VT-1 of 4 Steam Dryer Support Brackets as part of new dryer vendor inspection program. Minor markings noted on mating surface with dryer, consistent with expected patterns.
	2012	EVT-1, VT-3	17RIO EVT-1 of 5 Feedwater Bracket to RPV welds per BWRVIP- 48 and VT-3 of same welds per ASME Section XI. No Recordable Indications. VT-3 of 6 Surveillance Brackets for engagement to satisfy recent Industry OE. Lower 120 degree bracket found not to be engaged. This surveillance sample was removed per the BWRVIP ISP and holder was not reinstalled. Three of 6 brackets also inspected per ASME Section XI. No Recordable Indications.
	2014		

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		VT-3, VT-1, EVT-1	18RIO VT-1 of 4 Core Spray Header Brackets on Bravo Core Spray Loop, PB exams per BWRVIP-18. No Recordable Indications. EVT-1 of same brackets, Bracket to RPV weld per BWRVIP-48 and ASME XI. No Recordable Indications. EVT-1 of 4 sets Jet Pump to RPV welds, JP11/12 welds A/B, JP13/14 welds A/B, JP15/16 welds A/B. No Recordable Indications. EVT-1 of all 4 Steam Dryer Support Brackets per BWRVIP-48 and ASME XI. No Recordable Indications VT-1 of Steam Dryer Support Brackets contact surfaces for wear pattern. Slight change in wear patterns for all 4 brackets and mating surfaces on the 4 Steam Dryer Seismic Lugs. VT-3 of B Guide Rod per ASME XI. VT-3 for engagement only for Surveillance Specimen Brackets. No Recordable Indications.
	2016	EVT-1, VT-3, VT-1	EVT-1 and VT-3 of all 4 Steam Dryer Support Brackets. No recordable indications on the welds. Slight new wear pattern. VT-3 of all Surveillance Specimen Brackets for engagement. VT-3 of 1A and VT-1 of 1B Surveillance Specimen Bracket. No Recordable Indications. EVT-1 of 4 sets of Jet Pump riser brace welds. No Recordable Indications.
	2018		VT-3 of all Surveillance Specimen Brackets for engagement. VT-1 looking for wear and cracking per new needed guidance. No Recordable Indications. EVT-1 and VT-1 of 4 dryer support brackets, New change to wear patterns. EVT-1 and VT-3 of Feedwater Sparger Brackets to RPV, No recordable indications.

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Steam Dryer	2006	VT-1	14 RIO VT-1 exam of all steam dryer components per GE SIL 644 Rev. 1 and BWRVIP-139 in anticipation of EPU. Inspections included Hood Panel Welds, Lifting Lugs, Drain Channel Welds, Hood/End Panel Welds, Steam Dam to Hood Joint Welds, Tie Bar Welds, Vane Bundle to Vane Assembly, and all previously identified indications. Minor growth in existing minor IGSCC cracks some new IGSCC minor cracks in Drain Channel and Hood/End Panel Welds. Newly discovered Vane Bundle Assembly to Seam Dam weld 8" fatigue crack. Fatigue crack in Upper Dryer Lifting Lug Support for the 220° Lifting Lug found. Entire flaw lengths for both locations were repaired through underwater welding.
	2008	VT-1	15RIO VT-1 Baseline PSI exam of new replacement steam dryer prior to installation per BWRVIP-139. Four welds required re-work after acceptance by supplier.

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	2010	VT-1, VT-3	16RIO VT-1 of 380 weld locations of new steam dryer after one cycle per supplier inspection guidance. Minor IGSCC discovered in 3 locations in one drain channel weld HAZ, Use-As- Is. VT-3 of dryer hoods and skirts, 12 locations for gross damage. Includes Instrument Removal areas. No Recordable Indications. VT-3 of Lifting Rods and Lifting Eye tack welds. All four lifting eye set screw anti-rotation tack weld locations were found to be cracked. Modification performed to install fillet welds between lifting eye and rod. Modification requires Deviation Disposition due to selection of filler material.
	2012	VT-1, VT-3	17RIO VT-1 of all dryer welds inspected in 2010 as continuation of vendor inspection recommendations for new steam dryers. Overall VT-3 of dryer hoods and skirt. Underside exams performed best effort VT-1. Minor additional growth in IGSCC at dryer drain channel weld. Minor IGSCC discovered at 2 Lifting Lug support bracket welds and dryer skirt weld. VT-3 of outer hoods revealed areas of discoloration. All indications were Use-As-Is.

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	2014	VT-1, VT-3	18RIO VT-1 of all dryer welds inspected in 2012 as continuation of vendor inspection recommendations for new steam dryers. Overall VT-3 of dryer hoods and skirt. Underside exams performed best effort VT-1. Cracking attributed to fatigue observed in two interior Divider Plate welds. Minor additional growth in IGSCC at dryer drain channel weld. Minor growth in IGSCC discovered at 2 Lifting Lug support bracket welds and dryer skirt weld. Minor cracking observed in Lifting Rod to Eye fillet welds. VT-3 of outer hoods revealed areas of discoloration, no change in patterns. All indications were Use-As-Is.
	2016	VT-1, VT-3	First outage of non 100% Dryer inspections. New growth found on interior Divider Plate welds. New growth found on 045 degree skirt panel weld. New indication found on 270 degree lifting eye set screw tack weld. New growth found on 40 and 320 degree lifting eye to rod welds. Slight change to wear noted on 0 and 180 degree lower guide. New growth found on 140 and 220 degree lower bracket lifting lug.
	2018		Slight change to wear patterns on seismic lugs. New growth to indication on the 135 deg Skirt Panel. No change to indications on the 0 and 45 deg Skirt Panels. Slight changes wear/wear patterns on 0 and 180 deg lower guides. New growth to indication on lower 140 deg lifting lug assembly. No changes to indications on SN-E-1, TB-AB-5B, Hoods A and F, ID divider plate F on 0 and 180 deg.

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Steam Separator	2008	VT-1	15RIO VT-1 of 25% of support ring to gusset welds. Minor IGSCC cracks found in 4 welds. Use-As- Is.
	2008	VT-3	VT-3 of all tie bars. No Recordable Indications in tie bars. Nine exhaust tubes exhibited minor areas of deformation / denting all Use As-Is.
	2008	VT-3	VT-3 of shroud head bolt windows and pins. Minor wear observed in three bolts. Use-As-Is disposition.
	2008		UT exam of 31 "old style" shroud head bolts. Two bolts contained Recordable Indications and were replaced.
	2010	VT-1	16RIO VT-1 exam of 32 Gusset welds per EPU requirement, one quadrant and 4 previous indications. Minor growth in one of four previous indications, 6 gusset welds minor IGSCC cracks, Use-As-Is.
	2010	VT-3	Three Shroud Head Bolt VT-3 exams of existing window and pin wear. No change noted.
	2012	VT-1	17RIO VT-1 exam of 58 Gusset welds per EPU requirements, one quadrant and 10 previous indications. Growth observed in indication in one weld, no growth observed in remaining 9 welds. Minor IGSCC discovered in 13 additional welds. All indications Use-As-Is.
	2012	VT-3	Three Shroud Head Bolt VT-3 exams of existing window and pin wear. No change noted from 2010 inspection.
	2014	VT-1	VT-1 of 23 upper and lower gusset welds with previous indications. Growth detected in 7 upper gusset welds and in 4 lower gusset welds. Use-As-Is
	2014	VT-3	Three Shroud Head Bolt VT-3 exams of existing window and pin wear. No change noted from 2012 inspection.

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	2014	VT-3	VT-3 Minor denting deformation observed in 3 Standpipes during Tie Bar overview. Use-As-Is
	2014	UT	UT of 27 "Old Style" Shroud Head Bolts. No Recordable Indications.
	2016	VT-3, VT-1	VT-3 of Shroud Head Bolts, some new wear found. Use as is New indications/growth found on gusset welds. Use as is Wear discovered on three Separator Lifting Lugs. Use as is
	2018	VT-3, VT-1	VT-3 of four Separator Lifting Lugs. Increase or new wear on three Separator Lifting Lugs. Use as is. VT-1 of 33 gusset locations. New growth to one indication on a lower gusset and to one indication on an upper gusset. Use as is. VT-3 of five Shroud Head Bolts. New wear or increased wear on five Shroud Head Bolts. Use as is.
Feedwater Spargers and Brackets	2008	VT-1, VT-3	VT-1 of feedwater sparger welds and nozzles. VT-3 of brackets for OE for pin wear into bracket top. No Recordable Indications Noted.
	2010	VT-3	16RIO VT-3 of all 12 brackets per EPU for pin wear. Minor acceptable movement was observed in all 12 brackets. Minor pin wear observed in 3 brackets, Use-As-Is.
	2012	VT-3	17RIO VT-3 of all 12 brackets per EPU for pin wear. No change in wear observed in 3 brackets in 2010 or degree of movement.
	2014	VT-3	18RIO VT-3 of all 12 brackets. No change in pin wear observed in 5 brackets with documented pin wear. Minor movement noted in all 12 brackets.

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	2016	VT-3	New wear/growth on several Feedwater Sparger bracket pins. Use as is.
	2018		VT-3 of all Sparger Bracket pins. New or increased wear on two pins. Use as is.
Miscellaneous DM Welds	2008	UT	During the U1-15RIO, six (6) dissimilar metal (DM) IGSCC Category C welds and two (2) IGSCC Category E weld overlays were examined to the requirements of ASME Section XI, Appendix VIII, Supplement 10, using automated ultrasonic equipment. These eight (8) welds all contained Alloy 82/182 weld material. No failures were identified. Included in these eight examinations was the examination of vessel nozzle to safe end weld N2D NOZ-SE, which was added to the U1-15RIO inspection scope when review of its previous 2004 exam data (prompted by EPRI/BWRVIP Letter 2007-367 as the result of recent industry DM weld issues) identified a 'sub-surface reflector or discontinuity'. The U1-15RIO examination determined that the sub-surface flaw was from original weld manufacture and that it has not grown, nor are there any forces causing it to grow. The sub-surface flaw meets ASME Section XI Table IWB 3514-2 requirements
	2010	UT	16RIO, five (5) dissimilar metal (DM) IGSCC Category C welds examined to the requirements of ASME Section XI, Appendix VIII, Supplement 10. No Recordable Indications
	2016	UT	Inspected 2 Category C DM welds on Unit 1 (NRI)
	2018	UT	Inspected 1 Category C DM welds on Unit 1 (NRI)

Fall 2018 Inspection Summaries

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	2005	UT	Baseline: UT (two-sided) examination of H1, H2, H3, H4, H5, H6, H7 performed per BWRVIP-76. Results as follows: Weld #/Scan Side/% Coverage/% Flawed H1 / Upper / 83.0% / 0.0% H1 / Lower / 82.1% / 2.1% H2 / Upper / 81.8% / 0.4% H2 / Lower / 88.7% / 0.0% H3 / Upper / 88.7% / 0.0% H3 / Lower / 79.2% / 5.1% H4 / Upper / 90.0% / 20.1% H4 / Lower / 89.6% / 2.6% H5 / Upper / 91.3% / 1.2% H5 / Lower / 91.3% / 0.0% H6 / Upper / 91.9% / 0.0% H6 / Lower / 91.9% / 11.2% H7 / Upper / 91.4% / 12.0% H7 / Lower / 78.0% / 0.0%

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Core Shroud (continued)	2016	UT	Reinspection per BWRVIP-76, UT (two-sided) examination of H1-H7; Baseline per BWRVIP-76, UT examination of V3 and V4. Results as follows: Weld #/Scan Side/% Coverage/% Flawed H1 / Upper / 84.6% / 0.0% H1 / Lower / 87.8% / 1.2% H2 / Upper / 87.9% / 0.3% H2 / Lower / 87.0% / 0.0% H3 / Upper / 86.8% / 0.0% H3 / Lower / 86.9% / 5.8% H4 / Upper / 97.5% / 23.4% H4 / Lower / 98.3% / 4.8% H5 / Upper / 92.1% / 0.0% H5 / Lower / 92.7% / 0.0% H6 / Upper / 93.2% / 0.0% H6 / Lower / 100.0% / 4.2% H7 / Upper / 100.0% / 2.4% H7 / Lower / 100.0% / 0.0% V3 / CCW Side / 96.5% / 0.0% V3 / CW Side / 88.7% / 0.0% V4 / CCW Side / 87.8% / 0.0% V4 / CW Side / 87.7% / 0.0%
	2018	EVT-1	Off-Axis Cracking Examination per BWRVIP Letter 2016-030: EVT-1 visual examination of Welds H4 (40°-50°, 130°-140°, 160°-180°, 180°-200°, 220°-230°, & 310°-320°), V4 (40" of both HAZ's starting from H5), and V6 (40" of both HAZ's starting from H5). No relevant indications were observed.
Shroud Support	2005	VT-1, VT-3	Access Hole Cover Welds at 0° and 180°: Replacement required prior to Unit 1 Restart - Both access hole covers replaced with bolted repair design per DCN 51193. VT-1 visual baseline exam performed to inspect nut to retainer tack welds only. VT-3 visual baseline exam performed to document the as-left

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			condition of the AHCs. No relevant indications on either cover.
Shroud Support (continued)	2005	EVT-1	Baseline inspection per BWRVIP-104 of the H8 weld from the upper side with greater than 10% coverage between Jet Pumps 1 to 20 and 10 to 11. The lower side was performed during the removal of the Access Hole Cover modification with approximately 10% total coverage around the AHC areas at 0 & 180 degrees. No relevant indications.
		EVT-1, UT	Baseline inspection per BWRVIP-104 of the H9 weld from the upper side with greater than 10% coverage between Jet Pumps 1 to 20 and 10 to 11. The lower side was performed during the removal of the Access Hole Cover modification with approximately 10% total coverage around the AHC areas at 0 & 180 degrees. Also performed UT from the outside surface of the RPV obtained from access of the N1A and N1B (Recirculation outlet nozzles) windows. Achieved coverage was calculated to be 19%. No relevant indications.
		VT-3	Baseline inspection per BWRVIP-104 of the H10 and H12 welds at 0 and 180 degrees. These inspections were performed through the access hole cover openings during the repair. No relevant indications.
	2008	VT-3	VT-3 visual inspection of replacement access hole covers at 0 and 180 degrees to confirm that the AHC is in place and the hardware has not changed appreciably from the installed condition. No relevant indications were observed.
	2012	EVT-1	Reinspection of Shroud Support weld H-8 (EVT-1) at 0° and 180° per BWRVIP-38. No reportable indications

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			were observed.
Shroud Support (continued)	2016	EVT-1	Reinspection of Shroud Support weld H-9 (EVT-1) per BWRVIP-104. No reportable indications were found. Visual inspection per BWRVIP-180 (VT-1 from the top surface) and vendor recommendation (VT-3) of replacement access hole covers at 0 and 180 degrees to confirm that the AHC is in place and the hardware has not changed appreciably from the installed condition. No relevant indications were observed.
	2018	EVT-1	Reinspection of Shroud Support Weld H-8 (EVT-1) from Jet Pumps 1, 10, 11, & 20 per BWRVIP-38. No relevant indications were observed.

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Core Spray Piping	2001	UT	Baseline inspection per BWRVIP-18: UT of T-Box welds @ 120 (P2) and 240 degrees (P2, CP3). UT of elbow and sleeve welds for Downcomers A through D (P4a, P4b, P4c, P5, P6, and P7). No relevant indications.
	2005	EVT-1	Baseline inspection per BWRVIP-18: EVT-1 visual examinations (T-Box welds @ 120 (P1, AP3, BP3) and 240 degrees (P1, DP3), Piping Bracket (PB) welds @ 15, 110, 130, 165, 195, 230, 250, and 345 degrees). EVT-1 visual examinations of elbow and sleeve welds for Downcomers A through D (P4d, P8a, P8b). No relevant indications.
	2008	EVT-1	Reinspection per BWRVIP-18-A: EVT-1 visual inspections of T-Box Welds (P1 (120° & 240°), AP3, BP3, DP3) and Downcomer Welds (AP4d, A-D8a, A-D8b); no relevant indications were observed.
	2010	UT, EVT-1	Reinspection per BWRVIP-18, Rev. 1: EVT-1 visual inspections (T-Box welds @120 (P1, P2, AP3, BP3) and 240 (P1, P2, CP3, DP3); no relevant indications were observed. UT of elbow and sleeve welds (P4a, P4b, P4c, P4d, P5, P6, P7, P8a, & P8b) performed for Downcomers A through D. Two indications (1.04" and 2.20") observed on weld P4a on A Downcomer on the pipe side of the weld. Indications evaluated in accordance with the Core Spray Flaw Evaluation Handbook. Evaluation showed piping is acceptable as-is for one cycle. Piping

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			will be reinspected during U1R9 (2012). Supplemental EVT-1 visual inspection performed for P4a, P4b, P4c, P4d, P8a, and P8b; no relevant indications noted.
Core Spray Piping (continued)	2012	EVT-1	Reinspection per BWRVIP-18, Rev. 1: EVT-1 visual inspections (T-Box welds @ 120 (P1, P2, AP3, BP3) and 240 (P1, P2, CP3, DP3) degrees, Downcomer "A"-"D" elbow welds (P4a-d) and sleeve welds (P8a and P8b)). No relevant indications were observed.
	2014	UT, EVT-1	Reinspection per BWRVIP-18, Rev. 1: EVT-1 visual inspections (T-Box welds @120 (P1, P2, AP3, BP3) and 240 (P1, P2, CP3, DP3); no relevant indications were observed. Piping Bracket (PB) welds @ 15, 110, 130, 165, 195, 230, 250, and 345 degrees); no relevant indications were observed. UT of elbow weld P4a performed for Downcomer A and elbow welds P4a, P4b, P4c, & P4d performed for Downcomer B. Two indications observed on Weld P4a on Downcomer A were resized (0.40" and 2.37") and two additional indications were identified (0.52" and 0.23"). Indications evaluated in accordance with the Core Spray Flaw Evaluation Handbook. Evaluation showed piping is acceptable as-is for one cycle. Piping will be reinspected during U1R11 (2016). UT of sleeve welds (P5, P6, P7, P8a, & P8b) performed for Downcomers A through D; no relevant indications were observed. Supplemental EVT-1 visual inspection performed for P4a, P4b, P4c, P4d, P8a, and P8b; no relevant indications noted.

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	2016	EVT-1	Reinspection per BWRVIP-18, Rev. 1: EVT-1 visual inspections (T-Box welds @ 120 (P1, P2, AP3, BP3) and 240 (P1, P2, CP3, DP3) degrees, Downcomer "A"-"D" elbow welds (P4a-d) and sleeve welds (P8a and P8b)). No relevant indications were observed.
Core Spray Sparger	2005	EVT-1	Baseline inspection per BWRVIP-18: EVT-1 visual examinations of sparger welds (S1, S2, S4). BS2-R weld @ 9 degrees (Sparger to T-Box Weld, R side (Lower Sparger) recorded a crack adjacent to the weld and was structurally replaced by weld repair clamp per DCN 51193. AS2-R weld @ 354 degrees (Sparger to T-Box Weld, R side (Upper Sparger) recorded a pin hole adjacent to the weld and evaluated as "accept as is". Otherwise, no relevant indications.
		VT-1	Baseline inspection per BWRVIP-18: VT-1 visual examinations of sparger welds (S3a, S3b, S3c, Sparger Bracket (SB) welds @ 7, 45, 88, 93, 135, 172, 187, 225, 267, 273, 315, and 352 degrees). No relevant indications.
	2008	VT-3	VT-3 visual inspection of Core Spray Sparger BS-1/BS-2 Repair Clamp; no evidence of clamp assembly looseness or degradation detected.

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	2012	VT-3	VT-3 visual inspection of Core Spray Sparger BS-1/BS-2 Repair Clamp; no evidence of clamp assembly looseness or degradation detected.
Core Spray Sparger (continued)	2014	EVT-1, VT-1	Reinspection per BWRVIP-18, Rev. 1: EVT-1 visual examinations of Sparger A, C, D welds (S1 and S2 [L & R]), and Sparger A, B, C, D welds (S4 [L & R]) and VT-1 visual examinations of Sparger A, B welds (S3a, S3b, and S3c [L & R]) and Sparger Bracket (SB) welds @ 7, 45, 88, 93, 135, 172, 187, 225, 267, 273, 315, and 352 degrees); no relevant indications observed.
	2016	VT-3	VT-3 visual inspection of Core Spray Sparger BS-1/BS-2 Repair Clamp; no evidence of clamp assembly looseness or degradation detected.
Top Guide (Rim, etc.)	2005	VT-3	Baseline inspection (NON-BWRVIP): VT-3 visual examinations of Locations 4 (Grid Beam to Rim Top / Bottom Cover Plate Pins), 6 (Fuel Guard Weld and Bolting), 12 (Rim & Cover Plate Fabrication Weld), and 13 (Eye Bolt Boss). 1 area recorded as a condition on the plate (Location 12), evaluated as "accept as is". Otherwise, no relevant indications.
		EVT-1	Baseline inspection (NON-BWRVIP): EVT-1 visual examinations of Locations 1 (Grid Beam & Beam to Beam Crevice Slot) and 10 (Rim Pins). 3 areas recorded as not acceptable (Location 1),

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			evaluated as "accept as is". Otherwise, no relevant indications.
		EVT-1, VT-1	Baseline inspection per BWRVIP-26: Inspected Rim Welds (Location 11) (EVT-1) and Aligner Pins (Locations 2/3) (VT-1) at all locations. No relevant indications.
	2010	EVT-1, VT-1	Reinspection per BWRVIP-26-A: Locations 2 and 3 (VT-1) and Location 11 (EVT-1) inspected with no relevant indications.
Top Guide (Rim, etc.) (continued)	2014	EVT-1	Baseline (2014) per BWRVIP-183: Location 1 (Grid Beam and Beam-to-Beam Crevice Slot) inspected for ten grid beam cells; no reportable indications.
		EVT-1, VT-1	Reinspection per BWRVIP-26-A: Locations 2 and 3 (VT-1) and Location 11 (EVT-1) inspected with no relevant indications.
	2018	EVT-1	Baseline (2018) per BWRVIP-183: Location 1 (Grid Beam and Beam-to-Beam Crevice Slot) inspected for nine grid beam cells; no relevant indications.
		EVT-1, VT-1	Reinspection per BWRVIP-26-A: Locations 2 and 3 (VT-1) and Location 11 (EVT-1) inspected with no relevant indications.
Core Plate (Rim, etc.)	2005	EVT-1, VT-3	Baseline inspection per BWRVIP-25: All thirty-four (34) holddown bolts (Location 10) were EVT-1 inspected from the top side, and seventeen (17) holddown bolts (50%) were inspected from the bottom side with no reportable indications. All one hundred twenty-nine (129) plugs (Location 13) were VT-3 inspected; three plugs were replaced.
	2008	VT-3	Reinspection per BWRVIP-25: All thirty

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			four (34) holddown bolts (Location 10) were VT-3 inspected from above with no reportable indications. Three (3) core plate plugs replaced during Unit 1 Recovery were VT-3 examined to confirm that the replacement plug was in place. No evidence of movement, wear, or misalignment was visible.
	2010	VT-3	Reinspection per BWRVIP-25: All thirty four (34) holddown bolts (Location 10) were VT-3 inspected from above with no relevant indications.
Core Plate (Rim, etc.) (continued)	2012	VT-3	Reinspection per BWRVIP-25: All thirty four (34) holddown bolts (Location 10) were VT-3 inspected from above with no relevant indications.
	2014	VT-3	Reinspection per BWRVIP-25: All thirty four (34) holddown bolts (Location 10) were VT-3 inspected from above with no relevant indications.
	2016	VT-3	Reinspection per BWRVIP-25: All thirty four (34) holddown bolts (Location 10) were VT-3 inspected from above with no relevant indications.
	2018	VT-3	Reinspection per BWRVIP-25: All thirty four (34) holddown bolts (Location 10) were VT-3 inspected from above with no relevant indications.

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SLC	2007	EVT-2	Bare metal examination (EVT-2) performed per BWRVIP-03, -27. No reportable indications found.
	2008	EVT-2	Bare metal examination (EVT-2) performed per BWRVIP-03, -27. No relevant indications were observed.
	2010	UT	Stainless steel safe end-to-pipe weld examined for Nozzle N10. No relevant indications reported.
		EVT-2	Bare metal examination (EVT-2) performed per BWRVIP-03, -27. No relevant indications were observed.
	2012	UT	Stainless steel safe end-to-pipe weld examined for Nozzle N10. No relevant indications reported.
		EVT-2	Bare metal examination (EVT-2) performed per BWRVIP-03, -27. No relevant indications were observed.
	2014	UT	Stainless steel safe end-to-pipe weld examined for Nozzle N10. No relevant indications reported.
		EVT-2	Bare metal examination (EVT-2) performed per BWRVIP-03, -27. No relevant indications were observed.
	2016	UT	Stainless steel safe end-to-pipe weld examined for Nozzle N10. No relevant indications reported.
		EVT-2	Bare metal examination (EVT-2) performed per BWRVIP-03, -27. No relevant indications were observed.
	2018	UT	Stainless steel safe end-to-pipe weld examined for Nozzle N10. No relevant indications reported.
		EVT-2	Bare metal examination (EVT-2) performed per BWRVIP-03, -27. No

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			relevant indications were observed.
Jet Pump Assembly	2005	UT, VT-1	Baseline (2006) per BWRVIP-41, -138: UT of holddown beam locations BB-1, BB-2, and BB-3 (Jet Pumps 1 thru 20) - no reportable indications. Baseline (2005) per BWRVIP-41 of all High and Medium Priority Weld locations. Circumferential crack indication in backing ring for DF-3 weld (Jet Pump 19) will be inspected for change during U1C7 RFO in Nov. 2008. Baseline (2005) per BWRVIP-41: VT-1 of Medium Priority Location WD-1 (Jet Pumps 1 thru 20); No wedge wear observed. VT-1 of Set Screw Locations AS-1 and AS-2 performed for Jet Pumps 1 thru 20. Backlighting identified nine (9) set screw gaps ranging from 12 to 35 mils in width. Two reportable linear indications identified on one of two set screw tack welds for Jet Pump Nos. 15 (shroud-side) and 16 (vessel-side). Nine (9) auxiliary wedges installed on Jet Pumps 2, 3, 4, 6, 7, 8, 10, 12, and 14.
	2008	VT-3	VT-3 visual examination of the holddown beam for Jet Pump #8 was performed in response to misalignment concerns raised during Unit 1 Recovery and an RFI identified during the October 2007 INPO BWRVIP Review Visit. There was a minor misalignment with the beam but no relevant indications were observed. VT-3 visual examination of sensing line clamps installed during Unit 1 Recovery on Jet Pumps 1-5 and 11-15 performed to confirm that all of the repair hardware is in place and that the hardware has not shifted or changed from the as-installed

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			condition. No relevant indications were observed.
Jet Pump Assembly (continued)	2008	EVT-1	EVT-1 visual inspection performed of a circumferential crack indication in the backing ring for High Priority Location DF-3 (Jet Pump #19) to determine if the indication had increased in length. This indication was previously recorded during Unit 1 Recovery and does not appear to have changed.
		VT-1	Reinspection per BWRVIP-41 R1: VT-1 of Medium Priority Location WD-1 (Jet Pumps 1 thru 20) - No vibration-induced wear noted. Indication of vertical wedge movement at ten (10) locations was observed, but the movement markings did not appear to be recent and correlated with findings during the Unit 1 Recovery examinations. VT-1 of Set Screw Locations AS-1 and AS-2 performed for Jet Pumps 1 thru 20. Backlighting identified no new set screw gaps. Inspection results identified eight apparently new set screw tack weld indications in addition to the two set screw tack weld indications that were previously observed during Unit 1 Recovery. Justification for Continued Operation (JCO) was prepared and concluded that the jet pumps are acceptable as-is for one fuel cycle. Nine (9) auxiliary spring wedges installed during Unit 1 Recovery were inspected to verify contact; no relevant indications were observed.
	2010	EVT-1	Reinspection per BWRVIP-41, Rev. 3: EVT-1 of Medium Priority Locations RS-8 and RS-9 (Jet Pumps 1 thru 20) performed in accordance with BWRVIP

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			Letter No. 2009-202 ("Interim Guidance for Accelerated Inspections of Jet Pump Riser to Riser Brace Welds and Wedges"); no relevant indications.
Jet Pump Assembly (continued)	2010	EVT-1	EVT-1 visual inspection performed of a circumferential crack indication in the backing ring for High Priority Location DF-3 (Jet Pump #19) to determine if the indication had increased in length. This indication was unchanged from U1R7.
		VT-1	Reinspection per BWRVIP-41 R3: VT-1 of Medium Priority Location WD-1 (Jet Pumps 1 thru 20) - No vibration-induced wear noted; three new instances of minor wedge wear since U1R7 noted at Jet Pumps 1, 6, and 10 determined to be the result of routing service during operation. VT-1 of Set Screw Locations AS-1 and AS-2 performed for Jet Pumps 1 thru 20. Backlighting identified one new set screw gap (Jet Pump 20: Shroud-Side Set Screw - 17 mils). Evaluation performed to provide one fuel cycle (U1C9) of continued operation. Inspection results identified two apparently new set screw tack weld indications on Jet Pump 17 in addition to the nine set screw tack weld indications that were previously observed during U1R7 (NOTE: An indication that was identified during U1R7 for Jet Pump 14 was accidentally counted twice). Justification for Continued Operation (JCO) was prepared and concluded that the jet pumps are acceptable as-is for one fuel cycle (U1C9).

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Jet Pump Assembly (continued)	2012	UT, EVT-1, VT-1	Reinspection per BWRVIP-41 R3, -138 R1: UT of holddown beam locations BB-1 and BB-2, (Jet Pumps 1 thru 20) - no reportable indications. Reinspection per BWRVIP-41 R3: EVT-1 of Medium Priority Locations RB-1a-d, RB-2a-d, RS-6, & RS-7 (Jet Pumps 1 thru 6); IN-4, MX-2, & DF-1 (Jet Pumps 1 thru 5); no reportable indications. EVT-1 of High Priority Locations RS-1, RS-2, RS-3, DF-2, AD-1, AD-2, AD-3a, & AD-3b (Jet Pumps 1 thru 10); linear indication (0.5 inches long) observed in heat-affected zone above the AD-1 weld for Jet Pump 6 was evaluated using Jet Pump Flaw Evaluation Handbook and was deemed acceptable. Otherwise, no reportable indications. EVT-1 visual inspection performed of a circumferential crack indication in the backing ring for High Priority Location DF-3 (Jet Pump #19) to determine if the indication had increased in length. An additional indication was observed when a stain was reclassified; both indications were unchanged from U1R8, however. VT-1 performed of Medium Priority Location WD-1 (Jet Pumps 1 thru 20); minor wear/wedge movement on five jet pumps (Jet Pumps 1, 10, 12, 17, & 18); significant increase in wedge wear for Jet Pump 6 necessitated a repair (aux wedge installed on the Shroud-Side Set Screw (SS-SS) for Jet Pump 6 to stabilize the restrainer bracket assembly); RS-8 and RS-9 welds for Jet Pump 6 examined (EXPANDED SCOPE) to insure no degradation was present - no recordable indications.

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Jet Pump Assembly (continued)	2012	VT-1	VT-1 performed of Set Screw Locations AS-1 and AS-2 for Jet Pumps 1 thru 20. Backlighting identified three (3) set screw gaps (1 existing and 2 new) one of which (SS-SS for Jet Pump 18) measured at 9 mils and the other two (Vessel-Side Set Screw) VS-SS for Jet Pump 17 & SS-SS for Jet Pump 20) each measured at 20 mils, which exceeded the 15-mil screening criteria for installation of an auxiliary spring wedge but did not exceed the 20-mil criteria above which the potential exists for high level jet pump vibration. Gaps were corrected by tapping down on main wedge, so no additional auxiliary wedges installed. 17 set screw tack weld indications (11 existing and 6 new) were identified during U1R9. SS-SS on Jet Pump 17 was found backed out to shroud wall due to tack weld failure. SS-SS was restored to its original position and repaired (staked and an aux wedge added). Four additional set screws (Jet Pump 11 VS-SS, Jet Pump 13 SS-SS, Jet Pump 15 SS-SS, and Jet Pump 16 VS-SS) were found to have both tack welds broken and were staked and an aux wedge added. Remaining set screws had only 1 of 2 set screw tack welds and were acceptable as-is.

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Jet Pump Assembly (continued)	2014	VT-1	VT-1 performed of Medium Priority Location WD-1 (Jet Pumps 1 thru 20); minor wear/wedge movement on nine jet pumps (Jet Pumps 1, 6, 8, 9, 10, 12, 16, 17, & 18. Observed downward movement of the wedge for Jet Pumps 9 & 12 led plant to conservatively inspect unrepaired adjusting set screws for both pumps – no reportable indications; minor wedge wear on all other jet pumps was unchanged. 7 set screws (Jet Pump 2 SS-SS, Jet Pump 12 SS-SS, Jet Pump 13 VS-SS, Jet Pump 15 VS-SS, Jet Pump 17 VS-SS, Jet Pump 18 SS-SS, & Jet Pump 19 SS-SS) with one tack weld cracked out of two were inspected; in all cases the previously uncracked tack weld was intact. Nine (9) auxiliary spring wedges installed during Unit 1 Recovery and six (6) auxiliary spring wedges installed during U1R9 (2012) were inspected to verify contact; no relevant indications were observed.
		EVT-1	EVT-1 visual inspection performed of a linear indication (0.5 inches long) observed in heat-affected zone above High Priority Location AD-1 (Jet Pump #6) to determine if indication had increased in length; indication was unchanged from U1R9 in 2012. EVT-1 visual inspection performed of circumferential crack indications in the backing ring for High Priority Location DF-3 (Jet Pump #19) to determine if the indications had increased in length; both indications were unchanged from U1R9 in 2012.

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Jet Pump Assembly (continued)	2016	VT-1	VT-1 performed of Medium Priority Location WD-1 (Jet Pumps 1 thru 20); indications of minor wear on nine jet pumps (Jet Pumps 1, 2, 5, 6, 9, 10, 12, 16, & 17). Adjusting set screws (AS-1 and AS-2) for five jet of the pumps (1, 2, 6, 9, & 10) conservatively added to scope to ensure no vibration-related damage was occurring; no set screw gaps nor new tack weld cracking observed; no slip joint clamps were required to be installed. 3gaps observed during last set screw gap inspection during U1R9 were reinspected (Jet Pump 17, VS-SS - no gap observed; Jet Pump 18, SS-SS - no gap observed; Jet Pump 20, SS-SS - 13-mil gap); no aux wedges were required to be installed. 7 set screws (Jet Pump 2 SS-SS, Jet Pump 12 SS-SS, Jet Pump 13 VS-SS, Jet Pump 15 VS-SS, Jet Pump 17 VS-SS, Jet Pump 18 SS-SS, & Jet Pump 19 SS-SS) with one tack weld cracked out of two were inspected; in all cases the previously uncracked tack weld was intact. Four (4) auxiliary spring wedges inspected as part of expanded scope had relevant indications, so all 15 aux wedges installed on Unit 1 were inspected. 14 of 15 wedges had minor wear but none was judged serious enough to prevent wedges from performing their design function.
		EVT-1	EVT-1 visual inspection performed of a linear indication (0.5 inches long) observed during U1R9 & U1R10 in heat-affected zone above High Priority Location AD-1 (Jet Pump #6) to determine if indication had increased in length; after cleaning the indication was re-identified as a scratch.

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Jet Pump Assembly (continued)	2016 (continued)	EVT-1	EVT-1 visual inspection performed of circumferential crack indications in the backing ring for High Priority Location DF-3 (Jet Pump #19) to determine if the indications had increased in length; both indications were unchanged from U1R10 in 2014 and upon evaluation were determined to be acceptable for one fuel cycle.
	2018	UT	Reinspection per BWRVIP-41 R3, -138 R1: UT of holddown beam locations BB-1, BB-2, and BB-3, (Jet Pumps 1 thru 20) - no relevant indications.
		EVT-1	Reinspection per BWRVIP-41 R3: EVT-1 of Medium Priority Locations RB-1a-d & RB-2a-d (Jet Pumps 7 thru 12); RS-6, RS-7, RS-8, & RS-9 (Jet Pumps 5 thru 10); IN-4, MX-2, & DF-1 (Jet Pumps 6 thru 10); no relevant indications. EVT-1 of High Priority Locations RS-1, RS-2, RS-3, DF-2, AD-1, AD-2, AD-3a, & AD-3b (Jet Pumps 11 thru 20); no relevant indications. EVT-1 visual inspection performed of circumferential crack indications in the backing ring for High Priority Location DF-3 (Jet Pump #19) to determine if the indications had increased in length; both indications were unchanged from U1R11 in 2016 and upon evaluation were determined to be acceptable for one fuel cycle.

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Jet Pump Assembly (continued)	2018 (continued)	VT-1, VT-3	Reinspection per BWRVIP-41 R3: Full re-baseline prior to EPU for Restrainer Bracket Assembly for Jet Pumps 1-20. VT-1 performed of Medium Priority Location WD-1; New wear on lower wedge to rod noted on six jet pumps (JPs 2, 3, 4, 7, 8, &15) and was judged to be acceptable as-is. Increased main wedge wear was observed on JP 2 to the extent that the decision was made to install a slip joint clamp as a means of mitigating the wear. However, when the inspection vendor (GE-Hitachi) was in the process of taking measurements for preparing the slip joint clamp for installation, it was noted that there is a bracket (leftover vibration gear from initial unit startup) welded to the diffuser ears that would prevent installation of a slip joint clamp. GE-Hitachi then recommended performing additional visual inspections (primarily the RS-8 and RS-9 welds for Jet Pumps 1 / 2) to support preparation of a justification for continued operation (JCO) for one cycle of operation (U1C13) that would allow time to develop a repair that can be implemented during the next refueling outage (Unit 1 Refueling Outage 13 (U1R13)). No indications were found in the RS-8 and RS-9 welds, and the JCO was prepared. VT-1 performed of Set Screw Location AS-1 for 25 locations where aux wedges are not installed. Three (3) set screw gaps observed (Jet Pump 17, VS-SS - 11-mil gap; Jet Pump 18, VS-SS - 9-mil gap; Jet Pump 20, SS-SS - 18-mil gap), gap on JP 20 which exceeded the 15-mil screening criteria was reduced to 13 mils

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			after tapping of the main wedge. Therefore, no repair required.
Jet Pump Assembly (continued)	2018 (continued)	VT-1, VT-3	VT-1 performed of Set Screw Location AS-2 for 50 locations where aux wedges are not installed. Seven cracks observed during past outages (Jet Pump 2 SS-SS, Jet Pump 12 SS-SS, Jet Pump 13 VS-SS, Jet Pump 15 VS-SS, Jet Pump 17 VS-SS, Jet Pump 18 SS-SS, & Jet Pump 19 SS-SS) and one new crack (Jet Pump 16 SS-SS) were observed. In all cases the redundant tack weld was intact, so no repair was required. Fifteen (15) auxiliary wedges reinspected (VT-1/VT-3) to confirm that all of the auxiliary spring wedge parts are in place and that the hardware has not shifted or changed from the as installed condition. Minor wear observed during U1R11 on 14 of15 wedges was unchanged and was judged to be not serious enough to prevent wedges from performing their design function. VT-3 visual examination of sensing line clamps (SLCs) installed during Unit 1 Recovery on Jet Pumps 1-5 and 11-15 performed to confirm that all of the repair hardware is in place and that the hardware has not shifted or changed from the as-installed condition. A gap was noted at the contact point of the lower standoff to Sensing Line Clamp strut for Jet Pump 15, but this condition was analyzed and it was determined that this gap does not prevent the contact between the strut and the lower standoff. For that reason, the clamp is not considered degraded and is able to perform its design function. No other relevant indications were observed.

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Jet Pump Diffuser	N/A	N/A	N/A
CRD Guide Tube	2005	EVT-1, VT-3	Baseline per BWRVIP-47: 19 control rod guide tubes (10% of total) examined. VT-3 visual examination of Locations CRGT-1 and FS/GT-ARPIN-1, EVT-1 visual examination of Locations CRGT-2 and CRGT-3; no reportable indications.
CRD Stub Tube	2005	VT-3	VT-3 examinations performed for accessible areas for 145 stub tubes at various core locations. No damage or distortion was noted.
In-Core Housing	N/A	N/A	N/A
SRM/IRM Dry Tubes	2006	VT	All twelve (12) SRM/IRM dry tubes replaced with modified design which is resistant to cracking. Inspections will be scheduled after dry tubes have reached the expected 20-year life (2027).
	2018	VT-1	Four Dry Tubes (24-37 (1C), 32-37 (1D), 32-29 (1E), & 24-29 (1F)) were proactively inspected to verify the plunger engagement trend on Unit 1. While evidence of plunger spring relaxation was present in all four Dry Tubes, none of the plungers were fully disengaged from the Top Guide so immediate replacement in accordance with GE SIL 409 R5 was not required during U1R12. Additional inspections will be performed during U1R13 to verify the calculated rate of plunger

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			engagement.
Instrument Penetrations	2007	VT-2	Visual leak check is performed during Unit Startup. No reportable indications reported.
	2008	VT-2	Visual leak check performed during Unit Startup. Leak observed in safe-end to pipe weld for N11B instrumentation nozzle was repaired with weld overlay.
	2010	UT	Stainless steel safe end-to-pipe weld examined for Nozzles N11A, N12A, N12B, N16A, and N16B. No relevant indications reported.
		VT-2	Visual leak check performed during Unit Startup. No relevant indications reported.
	2012	UT	Stainless steel safe end-to-pipe weld examined for Nozzles N11A, N12A, N12B, N16A, and N16B. No relevant indications reported.
		VT-2	Visual leak check performed during Unit Startup. No relevant indications reported.
	2014	UT	Stainless steel safe end-to-pipe weld examined for Nozzles N11A, N12A, N12B, N16A, and N16B. No relevant indications reported.
		VT-2	Visual leak check performed during Unit Startup. No relevant indications reported.
	2016	UT	Stainless steel safe end-to-pipe weld examined for Nozzles N11A, N12A,

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			N12B, N16A, and N16B. No relevant indications reported.
		VT-2	Visual leak check performed during Unit Startup. No relevant indications reported.
Instrument Penetrations (continued)	2018	UT	Stainless steel safe end-to-pipe weld examined for Nozzles N11A, N12A, N12B, N16A, and N16B. No relevant indications reported.
		VT-2	Visual leak check performed during Unit Startup. No relevant indications reported.
Feedwater Sparger	2005	VT-1	Feedwater sparger nozzles examined (VT-1) per NUREG-0619; no recordable indications.
			VT-3 visual examination performed of all twelve (12) Feedwater Sparger End Brackets and Retaining Pins. No relevant indications were observed.
	2008	VT-3	VT-3 visual examination performed of all twelve (12) Feedwater Sparger End Brackets and Retaining Pins. No relevant indications were observed.
	2010	VT-3	VT-3 visual examination performed of all twelve (12) Feedwater Sparger End Brackets and Retaining Pins. Minor impact damage observed on 175° Bracket (acceptable as-is), but otherwise no relevant indications were observed (no pin wear).
	2012	VT-3	VT-3 visual examination performed of all twelve (12) Feedwater Sparger End Brackets and Retaining Pins. Minor wear observed under the retaining pin for the end bracket at one new location (55°)

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			when compared to U1R8 (2010) inspection results. Qualitative assessment performed to accept-as-is for one cycle. Additionally, minor impact damage observed on 175° end bracket was unchanged from what was observed during U1R8.
Feedwater Sparger (continued)	2014	VT-1	Feedwater sparger nozzles examined (VT-1) per NUREG-0619; no recordable indications.
		VT-3	VT-3 visual examination of Feedwater Sparger End Bracket and Retaining Pin at 55° location; minor wear under the Retaining Pin was unchanged. Qualitative assessment performed to accept-as-is for one cycle. Additionally, minor impact damage observed on 175° end bracket was unchanged from what was observed during U1R9 in 2012.
	2016	VT-3	VT-3 visual examination of Feedwater Sparger End Bracket and Retaining Pin at 55° location; minor wear under the Retaining Pin was unchanged. Qualitative assessment performed to accept-as-is for one cycle. Additionally, minor impact damage observed on 175° end bracket was unchanged from what was observed during U1R10 in 2014.
	2018	VT-3	VT-3 visual examination of Feedwater Sparger End Bracket and Retaining Pin at 55° location; minor wear under the Retaining Pin was unchanged. Minor wear observed under the retaining pin for the end bracket at two new locations (125° & 295°) when compared to previous inspection results. Qualitative assessment performed to accept-as-is for one cycle. Additional inspections during

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			U1R13 in 2020 will be scheduled to determine the extent of any additional wear. A contingency modification will also be developed in the event that the inspection results dictate that repair of any end brackets is required for continued operation. Additionally, minor impact damage observed on 175° end bracket was unchanged from what was observed during U1R11 in 2016.
Vessel ID Brackets	2005	EVT-1	Jet Pump Riser Brace Welds (40) examined (EVT-1): No recordable indications. Core Spray Piping Bracket Welds (8) examined (EVT-1): No recordable indications. Steam Dryer Support Bracket Welds (4) examined (EVT-1): Damage to upper right corner and an indication extending from the damaged corner of the dryer support bracket located at 274° was repaired during Unit Recovery. Feedwater Sparger Bracket Welds (12) examined (EVT-1): No recordable indications.
	2012	EVT-1	Jet Pump Riser Brace Welds (12, Jet Pumps 1-6) examined (EVT-1): No recordable indications.
	2014	EVT-1	Core Spray Piping Bracket Welds (8) examined (EVT-1): No recordable indications.
	2016	EVT-1	Jet Pump Riser Brace Welds (Jet Pumps 7-20) examined (EVT-1): No recordable indications. Steam Dryer Support Bracket Welds (4) examined (EVT-1): No recordable indications. Attachment weld at 184°

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			only received a VT-3 examination due to heavy crud buildup and will be cleaned and inspected to the proper exam method during U1R12 in 2018. Feedwater Sparger Bracket Welds (12) examined (EVT-1): No recordable indications. Guide Rod RPV Attachment at 0°: Indication on tack weld at the upper guide bracket to the Guide rod observed during Section XI Code examination.
Vessel ID Brackets (continued)	2018	EVT-1	Jet Pump Riser Brace Pad to Vessel welds (Jet Pumps 7-12) examined (EVT-1): No relevant indications. Steam Dryer Support Bracket to RPV Weld at 184° examined (EVT-1) due to VT-3 performed during U1R12 (DD-2017-01): No relevant indications.
LPCI Coupling	N/A	N/A	Not applicable to this plant.
Steam Dryer	2005	VT-1	Full baseline inspection performed in accordance with BWRVIP-139 and GE SIL 644 R1. Three Drain Channel Vertical Welds were found to have indications, and were repaired with weld overlays.
	2008	VT-1	Four previously recorded relevant indications noted during Unit 1 Recovery were VT-1 visually examined and confirmed. No change in condition was noted from what was previously reported. General visual inspection (pre-EPU baseline) performed in accordance with BWRVIP-139 and GE SIL No. 644 R1; no relevant indications were observed.
	2008	VT-1	In preparation for ascension to EPU and operation at EPU conditions, various steam dryer modifications were

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			performed. All thirteen (13) Steam Dryer Tie-Bars were replaced with a new design and three (3) additional steam dam gussets on each steam dam were added to the Steam Dryer. A visual (VT-1) inspection was performed to document the as-left condition.
	2010	VT-1	Four previously recorded relevant indications noted during Unit 1 Recovery were visually examined (VT-1) and confirmed. No change in condition was noted from what was previously reported in U1R7.
Steam Dryer (continued)	2012	VT-1	Four previously recorded relevant indications noted during Unit 1 Recovery were visually examined (VT-1) and confirmed. No change in condition was noted from what was previously reported in U1R8. Post-installation inspection (VT-1) conducted for EPU-upgraded Tie-Bars that were installed during U1R7 to confirm that the hardware has not changed appreciably from the installed condition; no relevant indications were observed.
	2014	VT-1	Four previously recorded relevant indications noted during Unit 1 Recovery were visually examined (VT-1) and confirmed. No change in condition was noted from what was previously reported in U1R9 (2012).
	2016	VT-1	Four previously recorded relevant indications noted during Unit 1 Recovery were visually examined (VT-1) and confirmed. No change in condition was noted from what was previously reported in U1R10 (2014).

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Plant: Browns Ferry Nuclear Plant: Unit 1

			Post-installation inspection (VT-1) conducted for EPU-upgraded Tie-Bars that were installed during U1R7 to confirm that the hardware has not changed appreciably from the installed condition; no relevant indications were observed. Four (4) BWRVIP-139-A "Red Welds" (welds associated with dryer integrity) were visually inspected (VT-1). Three of the welds were found to have been removed during U1R7 modifications, the fourth had no relevant indications when examined.
Steam Dryer (continued)	2018	N/A	Replacement steam dryer procured from GE-Hitachi and installed in preparation for EPU implementation during the next fuel cycle.
Steam Separator	2010	VT-3	Steam Separator tie bars (cross bracing) examined for signs of cracking (Reference: INPO OE 30657). No relevant indications were observed on the cross bracing, but a minor dent was recorded at the top of a standpipe located in the southeast corner of the separator that was acceptable as-is.
	2018	VT-1	Pre-EPU inspections per NEDO-33159: • Normal window and pin wear noted on all Shroud Head Bolts (SHBs) with the exception of SHB #1. Wear was severe enough on the locking pins for SHBs #2 & #45 that removal was recommended due to a possible FME issue should the pin become completely severed during operation. SHB removal justified by GE-H

Reactor Internals Inspection History

Plant: Browns Ferry Nuclear Plant: Unit 1

			Reduction Stress Analysis Report which stated that as many as 16 of the 48 bolts could be removed or declared non-functional. • A damaged stand pipe (270-degree side of Column R1) was unchanged when compared to previous data. No other relevant indications were observed.
DM Welds - BWRVIP-75-A Cat. C	2008	UT	7 welds inspected (RWCU-1-005-028, RCRD-1-33, RCRD-1-49, RCRD-1-50, RCRD-1-52, CS-1-002-008, CS-1-002-033A) during Unit 1 Refueling Outage 7 (U1R7): PDI-qualified, manual exams. No flaws identified, no repairs.
	2010	N/A	No Cat. C DM Welds were inspected during Unit 1 Refueling Outage 8 (U1R8).
	2012	N/A	No Cat. C DM Welds were inspected during Unit 1 Refueling Outage 9 (U1R9).
	2014	N/A	No Cat. C DM Welds were inspected during Unit 1 Refueling Outage 10 (U1R10).
	2016	N/A	No Cat. C DM Welds were inspected during Unit 1 Refueling Outage 11 (U1R11).
	2018	N/A	No Cat. C DM Welds were inspected during Unit 1 Refueling Outage 12 (U1R12).

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Plant: Browns Ferry Nuclear Plant: Unit 1

DM Welds - BWRVIP-75-A Cat. D	2008	UT	2 welds inspected (DRHR-1-2, DRHR-1-11) during Unit 1 Refueling Outage 7 (U1R7): PDI-qualified, manual exams. No flaws identified, no repairs.
	2010	N/A	No Cat. D DM Welds were inspected during Unit 1 Refueling Outage 8 (U1R8).
	2012	N/A	No Cat. D DM Welds were inspected during Unit 1 Refueling Outage 9 (U1R9).
	2014	N/A	2 welds inspected (DRHR-1-2, DRHR-1-11) during Unit 1 Refueling Outage 10 (U1R10): PDI-qualified, manual exams. No flaws identified, no repairs.
	2016	N/A	No Cat. D DM Welds were inspected during Unit 1 Refueling Outage 11 (U1R11).
	2018	N/A	No Cat. D DM Welds were inspected during Unit 1 Refueling Outage 12 (U1R12).

Reactor Internals Inspection History

Plant: Cooper Nuclear Station

Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Shroud	Fall 1995 (RE15)	UT	Baseline UT performed on welds H1 through H7 per BWRVIP guidelines. Indications identified in 4 circumferential welds. No examinations on vertical welds. No repair required.
	Spring 2005 (RE22)	UT	UT examinations were performed on welds H-1 through H-4 including a portion of vertical weld V16. Examination of welds H5-H7 was deferred to fall 2006. Single sided UT examinations were performed on welds H-1 through H-3 with welds H-4 and vertical weld (V-16) receiving dual sided examinations. Percentage of welds examined: H1 (54.9%), H2 (55.7%), H3 (63.9%), H4 (58.4%). The previously identified eight (8) flaws in H1 showed a net decrease in length. No new flaws in H2 were identified. The eight (8) flaws in H3 were reexamined with one (1) new flaw identified for a total increased change in flaw length relative to total weld length of 7.5 %. Two (2) new minor flaws were discovered in the HAZ of H4. In addition, a total of eleven (11) minor indications were identified in the base metal adjacent to H4. Six (6) of the indications exhibited characteristics associated with Stress Corrosion Cracking (SCC) in areas subjected to cold working during the shroud fabrication/installation process. The remaining five (5) indications did not exhibit characteristics of SCC but appeared to exhibit characteristics commonly observed from localized attachment removal sites. The indications were determined to be acceptable by analysis. No indications were observed in the vertical weld.
	Fall 2006 (RE23)	UT	UT examinations were performed on welds H5, H6a, H6b, and H7 using phased array. Two (2) sided examinations were performed on all welds except H7 that received a one-sided UT examination. Coverage was estimated at greater than 72% for welds H5, H6a, and H6b. H7 received greater than 53% coverage. A previously identified indication in H5 was re-examined with no apparent change. A previously identified indication in H6a was re-examined with no apparent change. A new minor indication was discovered in weld H6b in an area previously scanned in RE16 (1995). Two (2) new minor

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			indications were discovered in weld H7, one in a previously scanned location and the other in an area not previously scanned.
		VT-3	VT-3 examination of shroud per ASME Section XI, B-N-2 requirements. Discovered an indication approximately ten (10) inches long behind JP-19. Analyzed as acceptable.
	Spring 2008 (RE24)	VT-3	Performed first ASME B-N-2 VT-3 successive examination of flaw discovered in base metal behind JP-19. No changes in the indication.
	Spring 2011 (RE26)	VT-3	Performed second ASME B-N-2 VT-3 successive examination of flaw discovered in base metal behind JP-19. No changes in the indication.
	Fall 2014 (RE28)	UT	UT exams were performed on the H1 thru H7 welds along with the V16 and base material flaw behind JP19. The previously identified indications showed no apparent changes in growth and none were through wall. VT-3 examination of shroud per ASME Section XI, B-N-2 requirements. Also performed third ASME B-N-2 VT-3 successive examination of flaw discovered in base metal behind JP-19. No changes in the indication.
	Fall 2018 (RE30)	VT-1	During scheduled exam of the Top Guide Rim Weld, the camera was inadvertently lowered beneath the Top Guide and previously unreported cracking above the Shroud H3 weld on the interior of the Shroud was discovered. Scope was expanded to perform VT-1 all accessible locations that amounted to 74.2 % coverage on the interior of the H3 weld. Additionally, EVT-1 was performed on the exterior of the shroud H3 weld at four equally spaced quadrants for 20 degrees each, to ensure cracking initiating from the Shroud's interior did not extend to the exterior. No cracking was observed on the H3 exterior. Based on results of the visual exam, the 2014 UT data was re-evaluated using updated resolution techniques that allowed previously unreported flaws above the H3 weld to be detected. Where the VT and UT coverages overlapped, the flaw locations were compared and found in agreement. The flaw evaluation justified one cycle of operation until the H3 weld can be re-inspected in 2020 using a viable depth-sizing technique.

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Plant: Cooper Nuclear Station

Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Shroud Support/ Access Hole Covers	1993-1995	VT-3 and UT	VT-3 examinations of welds on 50% of core plate each outage. No indications. UT of access hole covers (AHC) in 1993. No indications.
	Spring 1997 (RE17)	VT-3	VT-3 examinations on 50% of the core shroud support plate. No indications.
		VT-1	VT-1 examinations of AHC in accordance with GE SIL 462. No indications.
	Fall 1998 (RE18)	VT-3	VT-3 examinations on 50% of the core shroud support plate. No indications.
		VT-1	VT-1 of AHC's in accordance with GE SIL 462. No indications. VT-1 of gusset plate welds between 0-180° to B-N-2.
	Spring 2000 (RE19)	VT-3	VT-3 examinations on 50% of the core shroud support plate. No indications.
		VT-1	VT-1 examinations of AHC's in accordance with GE SIL 462. No indications.
	Fall 2001 (RE20)	EVT-1	EVT-1 examinations on 17% of the H8 and H9 welds. EVT-1 examinations on 6 gusset welds and AHC's. No indications.
		UT	UT examination of AHC's. No indications.
	Spring 2003 (RE21)	EVT-1	EVT-1 examinations on four (4) gusset welds. No indications.
	Spring 2005 (RE22)	UT	UT examinations on 11.7% of the H9 weld length. No indications
	Fall 2006 (RE23)	EVT-1	EVT-1 examinations performed on approximately 16% of H8 weld length with no relevant indications. EVT-1 examinations of AHC per SIL462. No indications.
	Spring 2008 (RE24)	EVT-1	EVT-1 examinations performed on accessible lengths of welds on seven (7) gussets. No indications.
	Fall 2012 (RE27)	EVT-1	EVT-1 examinations on 16.7% of the H8 weld. EVT-1 examinations on accessible lengths of welds on two (2) gussets @ 195° and 315°. No indications.
	Fall 2014 (RE28)	UT/EVT-1	UT performed on H9 with 13.4% coverage. EVT-1 performed on both AHC's. No indications.

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Plant: **Cooper Nuclear Station**

Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	Fall 2018 (RE30)		EVT-1 performed on approximately 23% of H8 weld length with no relevant indications.
Core Spray Piping	1980's to 1995	VT-1/VT-3	IEB 80-13 examinations of piping and welds in annulus. Three (3) indications identified in Fall 1995 outage by EVT-1. No repair required.
	Spring 1997 (RE17)	UT	UT examination of CS P8a and P8b welds. Indications on one P8a and P8b welds (first discovery). Evaluated as acceptable.
		EVT-1	EVT-1 examinations on balance of piping.
	Fall 1998 (RE18)	UT	UT examinations on the P8a and P8b indications were re-examined.
		EVT-1	Balance examined by EVT-1. No visual indications.
	Spring 2000 (RE19)	UT	UT examinations on P8a and P8b welds with indications. No repair required.
		EVT-1	EVT-1 of P3, P4, P5, P6, and P7 welds. No visual indications.
	Fall 2001(RE20)	UT	UT examinations on P3's, three (3) P4's, P5's, P6's, P7's, P8a's and P8b's. EVT examinations of thirty-one of the CS piping welds.
		EVT-1	EVT-1 examinations on fifteen (15) welds. Indications re-examined on P8a weld and P8b welds.
	Spring 2003 (RE21)	UT	UT examinations on all P8a and P8b welds. Identified three (3) flaw indications on one P8b weld and one (1) flaw indication on one P8a weld. No change in length.
		EVT-1	EVT-1 examinations on both junction box covers and accessible portions of both P1's, 2 - P2's, 4 - P3's, 1-P4a, 1-P4b, 1-P4c, 1-P4d. EVT-1 all P8a and P8b welds. No indications.
	Spring 2005 (RE22)	EVT-1	EVT-1 examinations of both P1's. The examination revealed that the P1 weld is not a creviced weld based on the presence of an external weld on the tee box near the nozzle thermal sleeve. EVT-1 examinations were performed on both P2 welds, the four (4) P3 welds, the 4a – 4d welds at 190°, the P5's, P6's, and P7's, the four (4) P8a's, and four (4) P8b's.

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Plant: **Cooper Nuclear Station**

Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	Fall 2006 (RE23)	UT	UT examinations of P8b welds. Previous indications showed no change in size.
		EVT-1	EVT-1 examinations of piping welds and bracket attachment welds. No new relevant indications observed.
	Spring 2008 (RE24)	EVT-1	EVT-1 of indication near P1 at 90°. No change. EVT-1 of P1 at 270°. EVT-1 of P2's and P3's at 90° and 270°. EVT-1 of P4a, -b, -c, and -d at 170° EVT-1 of P5's, P6's, and P7's at 10°, 170°, 190°, and 350°.
	Fall 2009 (RE25)	EVT-1	EVT-1 examinations near P1welds at 90° and 270°. No change with the indication near the P1 at 90° (Loop A). EVT-1examinations of the four (4) P3, P5, P6 and P7 welds, EVT-1 examinations of downcomer welds P4a, P4b, P4c, and P4d at 10° . EVT-1 examinations of four (4) P8a and P8b welds. No change with visual indication of P8b at 10°.
		UT	UT performed on all four (4) P8a and P8b welds. Previously identified indications on the P8a at 190° (Loop B) and the P8b at 10° (Loop A) did not show any change.
	Spring 2011 (RE26)	EVT-1	EVT-1 of area and indication adjacent to P1weld at 90° (Loop A). No change to the indication. EVT-1 of area adjacent to P1weld at 270°. No indications. EVT-1 of the P2 welds at 90° and 270°. EVT-1 of the four (4) P3, P5, P6, and P7 welds. EVT-1 of downcomer welds P4a, P4b, P4c, and P4d at 190°. No indications.
	Fall 2012 (RE27)	EVT-1	EVT-1 of area and indication adjacent to P1weld at 90° on A Loop. No change to the indication. EVT-1 of the P2, P3a, & P3b @ 90°. EVT-1 of P5, P6, & P7 @ 10° & 170°. No indications. EVT-1 of area adjacent to P1weld at 270° on B Loop. No indications. EVT-1 of the P2, P3a, & P3b welds at 270°. EVT-1 of P5, P6, and P7 welds @ 190° & 350°. EVT-1 of downcomer welds P4a, P4b, P4c, and P4d @ 350°. No indications. Loops A & B, EVT-1 of the bracket attachment

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			welds PB @ 30°, 150°, 210°, and 330°. No indications.
		UT	UT performed on all four (4) P8a and P8b welds. Previously identified indications on the P8a at 190° (Loop B) and the P8b at 10° (Loop A) did not show any change.
	Fall 2014 (RE28)	EVT-1	Loop A EVT-1 of area and indication adjacent to P1weld at 90° on A Loop. No change to the indication. EVT-1 of the P2, P3a & P3b welds @ 90°. EVT-1 of P5, P6, & P7 @ 10° & 170°. EVT-1 of downcomer welds P4a, P4b, P4c, and P4d @ 170°. No indications observed. Loop B EVT-1 of area adjacent to P1weld at 270°. EVT-1 of the P2, P3a, & P3b welds at 270°. EVT-1 of P5, P6, and P7 welds @ 190° & 350°. No indications observed.
	Fall 2016 (RE29)	EVT-1	Loop A EVT-1 of area and indication adjacent to P1weld at 90° on A Loop. No change to the indication. EVT-1 of downcomer welds P4a, P4b, P4c, and P4d at 10°. No indications EVT-1 of two (2) P8a and two (2) P8b welds at 10° and 170°. No change with visual indication of P8b at 10°. Loop B EVT-1 of two (2) P8a and two (2) P8b welds at 190° and 350°. No indications.
	Fall 2018 (RE30)	EVT-1	Loop A EVT-1 of area and previous indication adjacent to P1weld at 90°. No changes observed to the indication. EVT-1 of the P2, P3a & P3b welds @ 90°. EVT-1 of P5, P6, & P7 @ 10° & 170°. No indications observed. EVT-1 of P8b weld and previous indication at 10°. No changes observed to the indication. Loop B EVT-1 of area adjacent to P1weld at 270°. EVT-1 of the P2, P3a, & P3b welds at 270°. EVT-1 of

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			downcomer welds P4a, P4b, P4c, and P4d @ 190°. EVT-1 of P5, P6, and P7 welds @ 190° & 350°. EVT-1 of P8a weld at 190°. No indications observed.
Core Spray Sparger	1980's to 1995	VT-1/UT	IEB 80-13 of welds on sparger. No indications.
	Spring 1997 (RE17)	EVT-1	EVT-1 examinations of sparger welds and brackets per BWRVIP-18. Debris (wire) in C-sparger Nozzle 15C identified. No other indications.
	Fall 1998 (RE18)	EVT-1	EVT-1 examinations of sparger welds and brackets inspected in accordance with BWRVIP-18. Debris (wire) in C-sparger Nozzle 15C was reconfirmed. No other indications.
	Spring 2000 (RE19)	EVT-1	EVT-1 examinations of sparger and brackets. Five (5) indications evaluated as acceptable.
	Fall 2001 (RE20)	VT-1	VT-1 of 25% of S3a, S3b, and S3c welds. No indications.
		EVT-1	EVT-1 examinations of all S1, S2, and S4 welds examined with no indications.
	Spring 2003 (RE21)	VT-1	VT-1 of 25% of S3a & S3b's and all bracket welds. No indications.
		EVT-1	EVT-1 examinations of two S1, two S2, both XTRW welds near t-boxes, and four (4) S4 welds. No indications.
	Spring 2005 (RE22)	N/A	Sparger examinations deferred to fall 2006 (RE23).
	Fall 2006 (RE23)	VT-1	VT-1 on 50% of the S3a, S3b, and S3c welds and 100% on sparger brackets. No indications.
		EVT-1	EVT-1 on 100% of S1's and S2's and S4's. No indications.
	Spring 2008 (RE24)	VT-1	VT-1 on 25% of the S3a, S3b, and S3c welds. VT-1 of SB's at 90°, 92°, 119°, 149°, 210°, 241° and 268°.
		EVT-1	EVT-1 examinations of S1's and S2's at 170° and 190°. EVT-1 examinations of S3a, S3b at 92° to 269°. EVT-1 examinations of S3c at 99°. EVT-1 examinations of S4's at 91° and 269°.
	Fall 2009 (RE25)	VT-1	VT-1 on 25% of the S3a, S3b, and S3c welds. VT-1 of SB's at 272°, 299°, 30°, 329°, 61°, 88° and 270°.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		EVT-1	EVT-1 examinations of S1 and S2 and at 10° and 350°. EVT-1 examinations of two (2) additional welds near the 350° tee-box S2 welds.
	Spring 2011 (RE26)	VT-1	VT-1 on 25% of the S3a, S3b, and S3c welds. VT-1 of sparger brackets at 90°, 92°, 119°, 149.5°, 210.5°, 241° and 268°. No indications.
		EVT-1	EVT-1 on C Sparger, S1 @ 170°, S2 @ 168° & 172°, S4 @ 91° & 269°. No indications. EVT-1 on D Sparger, S1 @ 190°, S2 @ 188° & 192°, S4@ 91° & 269°. No indications.
	Fall 2012 (RE27)	EVT-1	EVT-1 on A sparger, S1 @ 10, S2 @ 8° & 12° and S4 @ 89° & 271°. No indications. EVT-1 on B sparger, S1 @ 350°, S2 @ 348° & 352°, XTRW welds near T-box @ 346° & 354°, and S4 @ 89° & 271°. No indications.
		VT-1	VT-1 on the B sparger, S3a & S3b @ 271°-89° and S3c @ 279°. No indications. VT-1 of the sparger brackets at 30.5°, 61°, 88°, 270°, 272°, 299°, and 329.5°. No indications.
	Fall 2014 (RE28)	EVT-1	EVT-1 on C Sparger, S1 @ 170°, S2 @ 168° & 172°, S4@ 91° & 269°. No indications observed. EVT-1 on D Sparger, S1 @ 190°, S2 @ 188° & 192°, S4's@ 91° & 269°. No indications observed.
		VT-1	VT-1 on 25% of the S3a, S3b, and S3c welds. VT-1 of sparger brackets (SB) at 90°, 92°, 119°, 149.5°, 210.5°, 241° and 268°. No indications observed.
Top Guide (Rim, etc.)	1991-1995	VT	VT of top guide beams of fifty (50) cells was performed in 1991 per RICSIL 059. No indications. VT exams of the members in the load path between the top guide and core shroud in 1995 per SIL 588. One (1) indication on the 90° aligner pin keeper was observed and evaluated as acceptable (indication not on load bearing portion of assembly).
	Spring 1997 (RE17)	VT -1	VT-1 re-examination of Top Guide Aligner Pin located at 90° in accordance with SIL 588, R1. Indication on aligner pin keeper did not appear to change in size.
	Spring 2000 (RE19)	VT -1	VT-1 of two (2) hold down assemblies. No indications.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	Fall 2001 (RE20)	VT -1	VT-1 of two (2) horizontal aligner pins with no new indications. VT-1 of four (4) hold down assemblies.
		EVT-1	EVT-1 examinations of accessible areas of the Rim weld.
	Fall 2006 (RE23)	VT-1	VT-1 on two (2) hold down assemblies and aligner pin assemblies at 90° and 270°. A previous indication identified on the non-load bearing keeper of the aligner pin assembly at the 90° location was observed with no apparent change. However, two (2) new but similar type indications were also observed on the same keeper. Three (3) new indications were observed on the non-load bearing aligner pin keeper at the 270° location. Indications were evaluated as acceptable.
		VT-3	VT-3 examinations performed on accessible areas of top guide per B-N-2. No indications.
	Spring 2008 (RE24)	VT-1	VT-1 examinations performed on hold down and aligner assemblies at 0 and 180°. One (1) new indication identified on non-structural keeper at 180°. Similar to indications in keepers seen at 90° and 270°. Evaluated as acceptable.
		EVT-1	EVT-1 examinations of accessible areas of Rim weld.
		VT-3	VT-3 examinations performed of accessible top guide hold down assemblies, rim pins per B-N-2.
	Fall 2009 (RE25)	VT-1	VT-1 examinations performed on hold down and aligner assemblies at 90°. No change in the indication at the 90° aligner pin keeper.
		EVT-1	EVT-1 examinations of 10% or fourteen (14) of top guide grid beams per BWRVIP-183. No indications. However, only eight (8) were credited as quality examinations.
		VT-3	VT-3 examinations of accessible areas of top guide per B-N-2.
	Spring 2011 (RE26)	VT-3	VT-3 of accessible areas of Top Guide per B-N-2. No indications.
		VT-1	VT-1 for BWRVIP-26 credit was performed on the Hold Down assemblies and Aligner Pin assemblies at 270°. An indication not previously reported was observed adjacent to the attachment weld adjoining the Aligner Block to the Top

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			Guide. Indication appears to be a manufacturing remnant that was not completely removed during construction. Previously identified indications were also observed with no changes. Scope was expanded to include the remaining other three (3) Aligner Pin assemblies located at 0°, 90°, and 180°. VT-3 for Sect. XI B-N-2 and VT-1 for BWRVIP-26 credit was performed. Aligner Pin assembly at 0° was found to have seven (7) previously unidentified indications, with four (4) identified in the Aligner Pin Keeper and three (3) identified in the Aligner Block. Review of previous inspection video showed faint presence of indications. Evaluated as acceptable. Aligner Pin assembly at 90° was found to have one (1) previously unidentified indication located on the Aligner Pin Keeper. Review of previous inspection video showed a faint presence of the indication. Three (3) previously identified indications were also observed with no changes. Evaluated as acceptable. Aligner Pin assembly at 180° was found to have two (2) previously unidentified indications located on the Aligner Pin Keeper. Review of previous inspection video shows presents of indications. Three (3) previously identified indications were also observed with no changes. Evaluated as acceptable.
		EVT-1	EVT-1 examinations of accessible areas of the Rim weld. EVT-1 of two (2) top guide cell locations per BWRVIP-183. No indications.
	Fall 2012 (RE27)	VT-1	VT-1 examinations performed on hold down assembly at 180°. No indications.
		VT-1	VT-1 of the aligner pin assembly at 0° was performed to confirm seven (7) flaws identified in RE26. Four (4) of the flaws on the keeper were confirmed and verified to have no changes. One (1) flaw on the aligner pin block was confirmed and verified to have no changes. The two (2) other previously identified flaws on the block were determined to be non-relevant surface scratches. VT-1 of the aligner pin assembly at 90° was performed to confirm seven (7) flaws identified on the keeper in RE26. 4 of the flaws were confirmed

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			and verified to have no changes. One (1) additional flaw on the keeper was also reported. This flaw is similar to flaws seen on the other aligner pin keepers, but could not be verified in previous video due to camera positioning. VT-1 of the aligner pin assembly at 180° was performed to confirm three (3) flaws identified in RE26. All of the flaws on the keeper were confirmed and verified to have no changes. VT-1 of the aligner pin assembly at 270° was performed to confirm four (4) flaws identified in RE26. Three (3) of the flaws on the keeper were confirmed and verified to have no changes. One (1) previously reported flaw adjacent the aligner block to top guide weld was examined using an improved camera and delivery mechanism and determined to be a non-relevant surface scratch.
	Fall 2014 (RE28)	EVT-1	EVT-1 examinations of accessible areas of Rim weld. No indications
		VT-1	VT-1 examinations performed on accessible top portion of the TG hold down assembly at 0°. No indications. VT-1 of the aligner pin assembly at 0° was performed to confirm five (5) previously identified flaws. Four (4) flaws on the keeper were confirmed to have no changes. The identified flaw on the aligner pin block showed slight increase in length. VT-1 of the aligner pin assembly at 90° was performed to confirm five (5) previously identified flaws. The 5 flaws on the keeper were confirmed to have no changes. Five (5) unreported flaws on the aligner block were detected. VT-1 of the aligner pin assembly at 180° was performed to confirm three (3) previously identified flaws. The three flaws on the Keeper were confirmed to have no change. Five (5) unreported flaws on the aligner block and two (2) on the top guide were detected. VT-1 of the aligner pin assembly at 270° was performed to confirm three (3) previously identified flaws. The three (3) of the flaws on the keeper were confirmed and verified to have no changes. One (1) unreported flaw on the aligner block and one (1) on the top guide were detected.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			EVT-1 of beams near impact site of dropped control rod blade. (Ref OE 313327). No crack indications identified.
	Fall 2016 (RE29)	EVT-1	EVT-1of five (5) of top guide grid beams per BWRVIP-183. No indications. EVT-1 of beams near impact site of dropped control rod blade. (Ref OE 313327). No indications identified.
		VT-1	VT-1 of accessible top portion of the TG hold down assembly at 90°. No indications.
		VT-1/EVT-1	VT-1 and EVT-1 of aligner pin assembly at 0° confirmed five (5) previously identified flaws. All flaws showed no changes, except for Flaw 6 on the keeper which appeared longer compared to previous examination, but difference was attributed to improved tooling and lighting. VT-1 and EVT-1 of aligner pin assembly at 90° confirmed ten (10) previously identified flaws on the keeper and block. All flaws showed no changes except for, Flaw 5 (keeper) and 10 (block) which appeared longer compared to previous exam with difference attributed to improved tooling and lighting. VT-1 and EVT-1 of aligner pin assembly at 180° confirmed nine (9) previously identified flaws. All flaws showed no changes, except for Flaws 2 and 3 on keeper which appear longer compared to previous exam with difference attributed to improved tooling and lighting. One (1) new flaw was reported on the block to slider weld that was later confirmed to be present in the previous exam. Change attributed to improved tooling and lighting. VT-1 and EVT-1 of aligner pin assembly at 270° confirmed five (5) previously identified flaws that showed no changes. One (1) new flaw reported on keeper to washer weld that was later confirmed be present in the previous exam.
	Fall 2018 (RE30)	EVT-1	EVT-1 examinations of accessible areas of Rim weld. No indications
		VT-1/EVT-1	VT-1 and EVT-1 of aligner pin assembly and previous indications at 90° and 270°. No changes observed with previously identified indications.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		VT-1	VT-1 of accessible top portion of the TG Hold Down Assembly at 90° and 270°. No indications.
Core Plate (Rim, etc.)	Fall 1995	VT-3	VT-3 examinations of Hold down bolts examined in 1995 per SIL 588. No indications.
	Spring 2000 (RE19)	VT -3*	VT-3 examinations of 48 bolts examined from top side. *(Bolts are not accessible for EVT-1)
	Fall 2001 to Fall 2009 (RE20 – RE26)	VT-3	VT-3 examinations performed on accessible areas per B-N-2. No indications.
	Fall 2012 (RE27)	VT-3	VT-3 examination of three (3) hold down bolt locations (70, 71, and 72) from the top side. No indications.
	Fall 2014 (RE28)	VT-3	VT-3 exam of 36 (50%) hold down bolt locations from the top side. No indications.
	Fall 2018 (RE30)	VT-3	VT-3 exam of 36 (50%) hold down bolt locations from the top side. No indications.
SLC	1986-2001	VT-2	VT-2 examinations of SLC penetration during Class 1 RPV pressure test each outage.
	Spring 2003 (RE23)	EVT-2	Enhanced VT-2 examinations during Class 1 pressure test. No indications.
	Spring 2005 (RE22)	EVT-2/UT	Enhanced VT-2 performed of safe-end and penetration in conjunction with ASME Section XI Class I pressure test. Manual UT to Appendix VIII performed on nozzle to safe-end weld. No indications.
	Fall 2006 (R23)	EVT-2	Enhanced VT-2 examinations of safe-end and penetration performed in conjunction with ASME Section XI Class I system leakage test. No indications.
	Spring 2008 (RE24)	EVT-2	Enhanced VT-2 examinations performed of safe-end and penetration in conjunction with ASME Section XI Class I system leakage test. No indications.
	Fall 2009 (RE25)	EVT-2	Enhanced VT-2 examinations of safe-end and penetration performed in conjunction with ASME Section XI Class I system leakage test. No indications.
	Spring 2011 (RE26)	EVT-2	Enhanced VT-2 examinations of safe-end and penetration performed in conjunction with ASME Section XI Class I system leakage test.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			No indications.
	Fall 2012 (RE27)	UT	UT examination of N10 SLC nozzle to safe-end per Risk-Informed ISI Program and Appendix VIII. No indications.
		EVT-2	Enhanced VT-2 examinations of safe-end and penetration performed in conjunction with ASME Section XI Class I system leakage test. No indications.
	Fall 2014 (RE28)	EVT-2	Enhanced VT-2 examinations of safe-end and penetration performed in conjunction with ASME Section XI Class I system leakage test. No indications.
Jet Pump Assembly	1986-1995	VT-1/VT-3 /UT	VT examinations on ten (10) Jet Pumps each outage. Exam includes applicable GE SILS. Jet pump beams replaced in 1985. Jet pump beam UT first performed in 1993.
	Spring 1997 (RE17)	VT-1/VT-3	Ten (10) jet pumps VT examined. Exam includes applicable GE SILs. No indications.
	Fall 1998 (RE18)	VT -1/VT-3	Ten (10) jet pumps VT examined. Exam includes applicable GE SILs. No indications.
	Spring 2000 (RE19)	N/A	Examinations deferred to Fall 2001.
	Fall 2001 (RE20)	VT-3	VT-3 examinations on all 20 jet pump nozzle inlets per SIL 465. No indications.
		VT-1	VT-1 examinations on all WD-1's. No indications.
		EVT-1	EVT-1 examinations on BB-1 and BB-2 on JP's 1-10. EVT-1 on MX-2's on JP's 1 – 10. EVT-1 on RB-1's and RB-2's on JP's 1/2, 3/4, and 5/6. No indications. EVT-1 on RS-1's, RS-2's, and RS-3's on JP's 1 – 10. EVT-1 on RS-6's on JP's 1, 3, and 5. EVT-1 on RS-7's on JP's 2, 4, and 6. EVT-1 on RS-8's and RS-9's on JP's 1/2, 3/4, and 5/6. No indications.
	Spring 2003 (RE21)	VT-3	VT-3 examinations on the JP nozzle inlet mixers on JP's 11 - 20 per SIL 465. VT-3 examinations of set screws, gaps, and tack welds on JP's 1 – 20 per SIL 574. No indications.
		EVT-1	EVT-1 examinations on the IN-4 on JP's 5, 6, 11, 12, 13, and 14. EVT-1 examinations on the MX-2 on JP's 11, 12, 13, and 14. EVT-1 examinations on the RB-1's and RB-2's, on JP's 11/12 and 13/14.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			EVT-1 examinations on RS-1 and RS-2 on JP's 11/12, 13/14, 15/16, and 17/18; RS-6 on JP's 11 and 13; RS-7's on JP's 12 and 14; RS-8's and RS-9's on JP's 11/12, 13/14. No indications.
		UT	UT examinations on the BB-1's and BB-2's for JP's 1 – 20. No indications.
	Spring 2005 (RE22	VT-3	VT-3 on the JP nozzle inlet mixers on JP s 1 – 10 per SIL 465. No indications.
		VT-1	VT-1 examinations on JP set screws, gaps and tack welds on JP's 1, 2, 15, and 16 per SIL 574. No indications.
		EVT-1	EVT-1 examinations on RS-1, RS-2, and RS-3 welds on JP's 1 and 2 and the IN-4 welds on JP's 7, 8, 9, and 10. No indications.
	Fall 2006 (RE23)	VT-1	VT-1 per SIL574 of adjustment screw and gap and tack welds on JPs 9, 10. VT-1 of WD-1 at JP's 9, 10. No indications.
		EVT-1	EVT-1 of RS-1 and RS-2 on JP's 15/16 and 19/20.
	Spring 2008 (RE24)	EVT-1	EVT-1 examinations of IN-4's at JP's 19 and 20. EVT-1 examinations of RB-1a's, -1b's, -1c's, and -1d's between JP's 9/10 and 19/20. EVT-1 examinations of RB-2a's, -2b's, -2c's, and -2d's between JP's 9/10 and 19/20. EVT-1 examination of RS-3 between JP's 19/20. EVT-1 examinations of RS-6 at JP's 9 and 19. EVT-1 examination of RS-7 at JP's 10 and 20. EVT-1 examinations of RS-8 and RS-9 at JP's 19/20 and 9/10. No indications.
		UT	UT of BB-1, -2 and -3 on all 20 JP beams. No indications. UT of MX-2 (and AD-1, AD-2, DF-1, DF-2, DF-3 note in Diffuser Section) on all 20 jet pumps.
	Fall 2009 (RE25)	VT-3	VT-3 of JP nozzle inlets per SIL465 on JP's 15, 16, 17 and 18. No indications.
		VT-1	VT-1 per SIL574 of adjustment screw and gap and tack welds on JPs 10. 15, 16, 19, and 20. VT-1 of WD-1 at JP's 17, and 18. No indications.
		EVT-1	EVT-1 examinations of IN-4 on JP's 15, 16, 17, and 18. EVT-1examinations of RB-1's and RB-2's on JP's 7/8, 15/16, and 17/18. EVT-1 examinations on RS-1's and RS-2's on JP's 11/12 and 17/18. EVT-1examinations on RS-3's on JP's

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			11/12, 15/16, and 17/18. EVT-1 examinations on RS-6's on JP's 7, 15, and 17 and RS-7's on JP's 8, 16, and 18. EVT-1 examinations on RS-8's and RS-9's on JP's 7/8, 15/16, and 17/18. No indications.
	Spring 2011 (RE26)	VT-3	VT-3 of JP nozzle inlets on JP 9 and 10. No indications.
		VT-1	VT-1 of the JP Restrainer Wedge (WD-1) at JP-1 thru JP-20. No indications of movement or wear observed.
		EVT-1	EVT-1 of RS-8 and RS-9 on JP-1 thru JP-14, JP-19, and JP-20. No indications.
			EVT-1 of JP-9 and JP-10's IN-4, RB-1a, RB-1b, RB-1c, RB-1d, RB-2a, RB-2b, RB-2c, RB-2d, RS-3, RS-1, RS-2. EVT-1 of JP-9's RS-6 and JP-10's RS-7. No indications.
			EVT-1 of JP-7 and JP-8's RS-3. No indications.
	Fall 2012 (RE27)	EVT-1	EVT-1 of JP-13 and JP-14's IN-4, RB-1a, RB-1b, RB-1c, RB-1d, RB-2a, RB-2b, RB-2c, RB-2d, RS-1, RS-2, & RS-3. EVT-1 of RS-6 on JP-13 and RS-7 on JP-14. No indications.
			EVT-1 of JP-7 and JP-8's RS-3. No indications.
			EVT-1 of JP-15 and 16's RS-3. No Indications.
		VT-1	VT-1 of the JP Restrainer Wedge (WD-1) at JP-1, 2, 9, 10, 13, 14, 15, 16, 19, & 20. No indications of movement or wear observed.
			VT-1 of the JP-15 set screw gaps and slip joint. Previously identified shroud side gap was found to have an increase of 0.003" with no signs of movement. Vessel side set screw confirmed to have partial contact. No indications on slip joint. VT-1 of the JP-20 set screw gaps and slip joint. Previously identified shroud side gap was found to have an increase of .004" with no signs of movement. Newly reported Vessel side set screw gap measured to be .013". No indications on slip joint.
		VT-3	VT-3 of JP nozzle inlets on JP-13 and 14. No indications.
	Fall 2014 (RE28)	EVT-1	EVT-1 of MX-2 on Jet Pumps 1, 2, 8, 9, & 10. No Indications.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			EVT-1 of JP-1 and JP-2's IN-4, RB-1a, RB-1b, RB-1c, RB-1d, RB-2a, RB-2b, RB-2c, RB-2d, RS-1, RS-2, RS-3, RS-6 on JP-1 and RS-7 on JP-2. No indications.
		VT-1	VT-1 of the JP Restrainer Wedge (WD-1) at JP-1 thru JP-20. No indications of movement or wear observed. VT-1 of the set screws and auxiliary wedges on Jet Pump 1, 2, 9, &10. JP10 had a previously identified shroud side gap that was found to be 0.011" with no signs of movement. JPs 1, 2, and 9 set screws and aux wedges were found to be in full contact with no signs of wear.
		VT-3	VT-3 of JP nozzle inlets on JP-1 and 2. No indications.
	Fall 2016 (RE29)	EVT-1	EVT-1 of MX-2 and IN-4 on JP-6. No Indications. EVT-1 of RS-1, RS-2, and RS-3 on JP-3&JP-4 and RS-1 and RS-2 on JP-7&JP-8. No Indications EVT-1 of JP-5&JP-6's RB-1a, RB-1b, RB-1c, RB-1d, RB-2a, RB-2b, RB-2c, RB-2d, RS-1, RS-2, RS-3, RS-6, RS-7, RS-8, and RS-9. No Indications.
		VT-1	VT-1 of set screw gaps and slip joints on JP-15 and JP-20. No Indications. VT-1 of the JP Restrainer Wedge (WD-1) at JP-5 and JP-6. No indications.
		VT-3	VT-3 of JP nozzle inlets on JP-6. No indications.
	Fall 2018 (RE30)	EVT-1	EVT-1 of MX-2 and IN-4 on JP-3& JP-4. No Indications. EVT-1 of RS-1, RS-2, and RS-3 on JP-1&JP-2. No Indications EVT-1 of JP-3&JP-4's RB-1a, RB-1b, RB-1c, RB-1d, RB-2a, RB-2b, RB-2c, RB-2d, RS-6, RS-7, RS-8, & RS-9. No Indications.
		VT-1	VT-1 of set screw gaps on JP-10. Previous Shroud side gap observed at 0.012". VT-1 of Slip Joint on JP-10. Minor gap observed to be less than 0.020" with no observed blow-by.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			VT-1 of the JP Restrainer Wedge (WD-1) at JP-3 and JP-4. No indications.
		VT-3	VT-3 of JP nozzle mixer inlet on JP-3 & 4. No indications.
Jet Pump Diffuser	1986-1998	VT -3	10 Jet Pumps VT-3 examined each outage. No indications. No indications.
	Spring 1997 (RE17)	VT -1/VT-3	Ten jet pumps VT examined. Exam includes applicable GE SILs. No indications.
	Fall 1998 (RE18)	VT-1/VT-3	VT examinations on ten (10) jet pumps. Exam includes applicable GE SILs. No indications.
	Spring 2000 (RE19)	N/A	Exams deferred to Fall 2001.
	Fall 2001(RE20)	EVT-1	EVT-1 examinations on ten (10) jet pumps (5 assemblies). Identified an indication thought to be a broken jet pump sensing line upper bracket retaining weld. Evaluated as acceptable.
	Spring 2003 (RE21)	VT-3	VT-3 on JP sensing lines for all jet pumps per SIL 420. No indications.
		VT-1	VT-1 on sensing line brackets for all jet pumps per SIL 420. Previously reported cracked bracket weld was determined not to be cracked. No indications.
		EVT-1	EVT-1 examinations of AD-1, AD-2, AD-3a, AD-3b welds on JP's 11 through 20. No indications.
	Spring 2005 (RE22)	VT-3	VT-3 on JP sensing lines for JP's 1 – 11 and 14 per SIL 420. No indications.
		VT-1	VT-1 on JP sensing line brackets for JP's 1- 11 and 14. No indications.
	Fall 2006 (RE23)	EVT-1	EVT- 1 on AD-1 on JP's 1, 2, and 5. EVT-1 examinations on AD-2, AD-3a, AD-3b, DF-1 on JP-15, 16, 17, 18, 19, and 20 and DF-2 on JP's 15, 16, 19, and 20. No indications.
	Spring 2008 (RE24)	UT	UT on AD-1, AD-2, DF-1, DF-2, and DF-3 (and MX-2). One (1) indication on DF-1 at JP-14.
		EVT-1	EVT-1 examinations on DF-1 at JP-14 in addition to UT. Appeared to be a defect from original construction.
	Fall 2009 (RE25)	EVT-1	EVT-1 examinations of indication to DF-1 on JP-14 identified during the previous outage. No change.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	Spring 2011 (RE26)	EVT-1	EVT-1 re-examination of indication located on the inside surface of JP-14 at the DF-1 weld. Indication was found to have no changes.
	Fall 2012 (RE27)	EVT-1	EVT-1 re-examination of indication located on the inside surface of JP-14 at the DF-1 weld. Indication did not change.
	Fall 2014 (RE28)	EVT-1	EVT-1 of AD-1, AD-2, AD-3a, AD-3b, DF-1, DF-2 on Jet Pumps 1, 2, 8, 9, & 10. No Indications. EVT-1 re-examination of indication located on the inside surface of JP-14 at the DF-1 weld. Indication did not change.
	Fall 2016 (RE29)	EVT-1	EVT-1 of AD-1, AD-2, AD-3a, AD-3b, DF-2 on Jet Pumps 3, 4, 5, 6, & 7. No indications. EVT-1 of DF-1 (outside diameter) on Jet Pumps 6 and 14. No Indications. EVT-1 of DF-1 (inside diameter) for re-examination of indication on the inside surface of JP-14. Indication showed no change.
	Fall 2018 (RE30)	EVT-1	EVT-1 of DF-1 outside and inside diameter for re-examination of indication on the inside surface of JP-14. Indication showed no change. EVT-1 of DF-1 (outside diameter) on Jet Pump 3 and 4. No Indications.
CRD Guide Tube	Fall 1995	VT -3	VT-3 exams of accessible guide tubes. No indications.
	Spring 1997 (RE17)	VT -3	VT-3 exams of accessible guide tubes. No indications.
	Fall 1998 (RE18)	VT -3	VT-3 exams of accessible guide tubes. No indications.
	Spring 2000 (RE19)	VT-3	VT-3 examinations of eighteen (18) anti-rotation pins and eleven (11) CRGT-1 welds. No indications.
		EVT-1	EVT-1 examinations of four (4) CRGT-2 and CRGT-3 welds. No indications.
	Fall 2001 (RE20)	VT-3	VT-3 examinations of thirteen (13) anti-rotation pins and thirteen (13) CRGT-1 welds. No indications.
		EVT -1	EVT-1 examinations of five (5) CRGT-2 and CRGT-3 welds. No indications.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	Spring 2005 (RE22)	EVT-1	EVT-1 examinations on one (1) CRGT-2 weld and one (1) CRGT-3 weld. No indications.
	Fall 2006 (RE23)	EVT-1	EVT-1 examinations of one (1) CRGT-2 weld and one (1) CRGT-3 weld. No indications.
	Spring 2008 (RE24)	EVT-1	EVT-1 examinations of two (2) CRGT-2 welds and three (3) CRGT-3welds. No indications.
	Fall 2009 (RE25)	EVT-1	EVT-1 examinations on one (1) CRGT-2 weld and two (2) CRGT-3welds. No indications.
CRD Stub Tube	N/A	N/A	No record of examination.
In-core Housing	NA	NA	No record of examination back to 1996
Dry Tube	1989-1991	VT	VT exam in 1989, 1990, and 1991 per SIL409R1. All dry tubes replaced in 1993.
	Spring 2005 (RE22)	VT	Replaced one (1) dry tube.
	Fall 2012 (RE27)	VT-1	VT-1 was performed on dry tube locations at 12-09 and 28-25. No indications.
	Fall 2014 (RE28)	VT-1	VT-1 performed on IRM dry tube locations at 20-25 and 36-41. No indication observed. Replaced IRM dry tube at 12-41.
	Fall 2016 (RE29)	VT-1	VT-1 on Dry Tube Locations. IRM 28-33 & 36-09 and SRM 12-33, 20-17, & 36-25. No Indications.
	Fall 2018 (RE30)	VT-1	VT-1 on Dry Tube Locations per SIL 409 Rev. 5. IRM 12-09, 20-25, 28-25, & 36-41. All IRMs were found to have minor relaxation of plunger, but all had adequate engagement and acceptable for continued use.
Instrument Penetrations	1986-2000	VT-2	VT-2 examination performed during RPV system leakage test each outage for all six (6) instrument nozzle penetrations. No indications.
	Spring 2000 (RE19)	PT	PT examination of N16A instrument penetration nozzle to safe-end weld.
	Fall 2001 (RE20)	VT-2	VT-2 examination performed during RPV system leakage test. No indications.
	Spring 2003 (RE21)	VT-2	VT-2 examination performed during RPV system leakage test. No indications.
	Spring 2005	VT-2	VT-2 examination performed during RPV system

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	(RE22)		leakage test. No indications.
		UT	UT examination of N16B nozzle to safe-end per Risk-Informed ISI Program and Appendix VIII. No indications.
	Fall 2006 (RE23)	VT-2	VT-2 examination performed during RPV system leakage test. No indications.
	Spring 2008 (RE24)	VT-2	VT-2 examination performed during RPV system leakage test. No indications.
	Fall 2009 (RE25)	VT-2	VT-2 examination performed during RPV system leakage test. No indications.
	Spring 2011 (RE26)	VT-2	VT-2 examination performed during RPV system leakage test. No indications.
	Fall 2012 (RE27)	VT-2	VT-2 examination performed during RPV system leakage test. No indications.
	Fall 2014 (RE28)	UT	UT examination of N16B nozzle to safe-end per Risk-Informed ISI Program and Appendix VIII. No indications.
		VT-2	VT-2 examination performed during RPV system leakage test. No indications.
	Fall 2016 (RE29)	VT-2	VT-2 examination performed during RPV system leakage test. No indications.
Vessel ID Brackets	1986-1995	VT -1/VT-3	ASME XI VT-3 (non-beltline) and VT-1 (beltline examinations) of jet pump riser brace, dryer, FW Sparger, Core Spray, guide rod, and surveillance capsule holder brackets performed once per interval. No indications.
	Spring 1997 (RE17)	VT -1/VT-3	VT-1/VT-3 ASME Section XI examinations on five (5) jet pump riser brackets, FW brackets and welds examined. No indications.
	Fall 1998 (RE18)	VT -1/VT-3	VT-1/VT-3 ASME Section XI examinations on five (5) jet pump riser brackets, FW brackets and welds examined. No indications.
		EVT-1	EVT-1 examinations on four (4) CS bracket attachment welds. No indications.
	Spring 2000 (RE19)	VT-3	VT-3 examinations of guide rod attachment welds. No indications.
		VT-1	VT-1 on FW sparger brackets. No indications.
		EVT-1	EVT-1 examinations on CS bracket attachment

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			welds. No indications.
	Fall 2001 (RE20)	EVT-1	EVT-1 examinations on all FW sparger bracket attachment welds and all dryer support attachment welds. No indications.
	Spring 2003 (RE21)	EVT-1	EVT-1 examination of on JP riser brace pad attachment weld at 150°. No indications.
	Spring 2005 (RE22)	VT-3	VT-3 examination of steam dryer hold down brackets.
	Fall 2006 (RE23)	EVT-1	EVT-1 of eight (8) FW sparger brackets and four (4) CS piping bracket attachment welds. No indications.
	Spring 2008 (RE24)	VT-3	VT-3 of guide rod attachment welds. No indications.
		EVT-1	EVT-1 examinations of JP riser brace pad attachment welds at 30°, 150°, 210°, 270°, and 330°. EVT-1 examinations of steam dryer support bracket attachment welds at 215° and 325°. No indications.
	Fall 2009 (RE25)	EVT-1	EVT-1 examinations of JP riser brace pad attachment welds at 60°, 90°, and 120°. No indications.
	Spring 2011 (RE26)	EVT-1	EVT-1 of the JP riser brace pad attachment welds, JP-RBPAD-ATTWLDS @ 30°. No Indications.
	Fall 2012 (RE27)	EVT-1	EVT-1 of four (4) CS piping bracket attachment welds at 30°, 150°, 210°, and 330°. No indications.
			EVT-1/VT-1 of JP riser brace pad attachment welds at 270°. No indications.
			EVT-1/VT-3 of steam dryer support bracket attachment welds at 215° and 325°. No indications.
		VT-1	VT-1 of surveillance capsule holder brackets at 300°. No indications.
		VT-3	VT-3 (direct) examination of steam dryer hold down brackets @ 35°, 145°, 215°, and 325°. No indications.
	Fall 2014 (RE28)	EVT-1	EVT-1 of Riser Brace attachment welds on JP-1 & 2 at 150°. No indications.
		EVT-1/VT-3	EVT-1/VT-3 of steam dryer support bracket attachment welds at 145° and 35°. No indications.

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Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		VT-1	VT-1 of surveillance capsule holder brackets at 30° & 120°. No indications.
		VT-3	VT-3 (direct) examination of steam dryer hold down brackets @ 35°, 145°, 215°, and 325°. No indications.
	Fall 2016 (RE29)	EVT-1	EVT-1 of the JP riser brace pad attachment welds @ 90°. No Indications.
	Fall 2018 (RE30)	EVT-1	EVT-1 of the JP riser brace pad attachment welds @ 120°. No Indications.
		VT-1	VT-1 of Surveillance Specimen Holder @ 300° per guidance of EPRI Letter 2018-045. Specimen Holder was moved to support UT of RPV welds and received "As Found" prior to move and "As Left" after reinstall. Minor signs of movement at the interface between upper attachment hook and the lead tube on the vessel right side.
		VT-1/VT-3	VT-1 of lower and VT-3 of upper surveillance capsule holder brackets at 30° & 120°. No indications.
		VT-3	VT-3 of guide rod attachment welds @ 0° and 180°. No indications.
LPCI Coupling	N/A	N/A	Not applicable to this plant.
Steam Dryer	Fall 2001 (RE20)	VT-1	VT-1 of twenty four (24) drain channel welds per SIL 474.
	Spring 2003 (RE21)	EVT-1	EVT-1 of twenty four (24) drain channel welds per SIL 474.
	Spring 2005 (RE22)	VT-1	VT-1 of leveling screws per OE 16110
	Fall 2006 (RE23)	VT-1 w/Character Card	Performed baseline VT-1 examinations to BWRVIP-139 and SIL 644, Rev 2. Re-examined five (5) minor indications previously identified per SIL 474 adjacent to several drain channels. Two (2) new indications were observed in a weld adjacent to a drain channel and both tack welds on one (1) lifting lug were observed. The indications were evaluated as acceptable.
	Fall 2009 (RE25)	VT-1(89)	VT-1 examinations on seven (7) previously identified indications on dryer. With additional cleaning, six (6) of the indications disappeared with only one (1) remaining (i.e., the cracked tack welds on one (1) lifting lug - no change in the lifting lug).

Reactor Internals Inspection History

Plant: Cooper Nuclear Station

Component in BWRVIP Scope	Date of Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	Fall 2016 (RE29)	VT-1 (89)	Performed VT-1 examinations to BWRVIP-139-A. Re-examined one (1) previous indication of cracked tack welds on lifting lug @ 145° with no changes. The other three (3) lifting lugs were observed to have similar cracked tacks that were not previously reported. Five (5) Tie Rods were reported to be slightly bent with no broken welds. One (1) additional indication was observed on the lower guide bracket weld at 180° that extended into the skirt. The indication was arrested with a 5/8th inch Stop-drill hole. No other dryer indications reported.
	Fall 2018 (RE30)	VT-1	Re-examined Steam Dryer skirt area and Lower Guide Rod bracket @ 180° where Stop Drill was performed on previously reported crack on skirt side. No cracking was observed above the Stop Drill repair, but 0.5" growth of the crack was observed traveling down the bracket. The slight growth was bounded by the original evaluation. The other previously identified indications of cracked tack welds on Lifting Lugs, bent Tie Rods, and bent Gusset plate were observed to have no apparent changes.
Dissimilar metal welds	Spring 2008 (RE24)	UT	Automated UT performed on four (4) CAT A welds per Appendix VIII. Manual UT performed on two (2) CAT A welds. All welds included in Risk-Informed ISI Program. No indications.
	Spring 2011 (RE26)	UT	Manual UT inspection performed on one (1) CAT D nozzle to cap weld (CRD Return) per Appendix VIII and Risk-Informed ISI Program. No indications.
	Fall 2014 (RE28)	UT	Manual UT inspection performed on three (3). CAT A welds per Appendix VIII. All welds included in Risk-Informed ISI Program. No indications.
	Fall 2016 (RE29)	UT	Automated Phased Array UT performed on one (1) CAT D weld and manual UT performed on one (1) CAT A weld. Both welds included in Risk-Informed ISI Program. No indications.

Reactor Internals Inspection History

Plant: Dresden Unit 3

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping	1980's Through 1994	VT-1	IEB 80-13 (1 MIL) VT-1 of piping and welds in annulus. Indications observed at two lower elbow to pipe welds 2P4c and 4P4c. These welds were repaired using GE designed clamps.
	4/97-R14	UT/EVT-1	UT Baseline inspections per BWRVIP-18 of all piping circ welds in annulus. Repairs removed and not reinstalled. EVT-1 of any piping welds in annulus inaccessible to scanner. Additional flaws identified on 1, 2 and 3P8a welds.
	2/99-R15	EVT-1	EVT-1 examined undemonstrated welds P8a and P4d on all four downcomers. Installed a "bumper" repair on 1P8a at the 80° downcomer.
	9/00-R16	UT/EVT-1	UT of "Target" welds and EVT-1 of all undemonstrated welds. Also, EVT-1 of welds made inaccessible from repair installed on the 80° downcomer including 1P7, 1P4c, 1P4d, 1P8a and b. Welds 2P4c and 4P4c exhibited flaw growth as predicted by Flaw Evaluation.
	10/02-R17	VT-1	Six P4 welds for presence of "excessive grinding". NRI. All undemonstrated welds P8a and P4d and long seams on thermal collars, NRI
	10/04 – R18	EVT-1	Examined piping welds 1P1, 2P1, 1P2, 2P2, 1P3, 2P3, 3P3, 4P3, 2P4a, 2P4b. Eight Core Spray Piping brackets, attachment weld, pad surface and HAZ of cladding. NRI.
		NA	Performed Core Spray Lower Sectional Replacement (all four downcomers) eliminating welds 1-4P4c, 1-4P4d, 1-4P8a, 1-4P8b, 1-4P5, 1-4P6, and 1-4P7.

Reactor Internals Inspection History

Plant: Dresden Unit 3

	11/06 – R19	VT-1/VT-3	Core Spray Lower Sectional Replacement - VT-1 of all accessible bolting, keepers, ratchets and latch springs. NRI - VT-3 of all repair hardware. NRI
		EVT-1	Examined piping welds: 1P1, 2P1, 1P2, 2P2, 1P3, 2P3, 3P3, 4P3, 3P4a, 3P4b and two piping brackets, attachment weld, pad surface and HAZ of cladding. NRI.
	11/08 – R20	EVT-1	Examined piping welds: 1P1, 2P1, 1P2, 2P2, 1P3, 2P3, 3P3, 4P3, 4P4a, 4P4b and two piping brackets, attachment weld, pad surface and HAZ of cladding. NRI.
		VT-1	Examined bolting and tack welds for one piping bracket. NRI
	11/10 – R21	EVT-1	Examined piping welds: 1P1, 2P1, 1P2, 2P2, 1P3, 2P3, 3P3, 4P3, 2P4a, 2P4b and two piping brackets, attachment welds, pad surfaces and HAZ of cladding. NRI.
		VT-1	Examined bolting and tack welds for one piping bracket. NRI.
		VT-1/VT-3	Core Spray Lower Sectional Replacement - VT-1 of 4 bolting, keepers, ratchet springs, latch springs, lateral pins, and keepers. NRI - VT-3 of repair hardware. NRI
	11/12 – R22	EVT-1	Examined piping welds: 1P1, 2P1, 1P2, 2P2, 1P3, 2P3, 3P3, 4P3, 1P4a, 1P4b and two piping brackets, attachment welds, pad surfaces and HAZ of cladding. NRI.
		VT-1	Examined bolting and tack welds for one piping bracket. One RI due to partially cracked tack weld.
	11/14 – R23	EVT-1	Examined piping welds: 1P1, 2P1, 1P2, 2P2, 1P3, 2P3, 3P3, 4P3, 3P4a, 3P4b and two piping brackets, attachment welds, pad surfaces and HAZ of cladding. NRI.
		VT-1	Examined bolting and tack welds for two piping brackets. RIs on both brackets due to partially cracked tack welds.

Reactor Internals Inspection History

Plant: Dresden Unit 3

		VT-1/VT-3	Core Spray Lower Sectional Replacements (all four lines) - VT-1 of bolting, keepers, ratchet springs, latch springs, lateral pins, and keepers. NRI - VT-3 of repair hardware. NRI
	11/16 – R24	EVT-1	Examined piping welds: 1P1, 2P1, 2P2, 2P3, 3P3, 4P4a, 4P4b and two piping brackets, attachment welds, pad surfaces and HAZ of cladding. NRI
		VT-1	Examined bolting and tack welds for three piping brackets. RIs on two brackets due to partially cracked tack welds.
	11/18 – R25	EVT-1	Examined piping welds: 1P1, 1P2, 1P3, 4P3, 1P4a, 1P4b and attachment welds, pad surfaces and HAZ of cladding on two piping brackets. NRI
		VT-1	Examined bolting and tack welds for one piping bracket. NRI
		VT-1/VT-3	Core Spray Lower Sectional Replacements (all four lines) - VT-1 of bolting, keepers, ratchet springs, latch springs, lateral pins, and keepers. NRI - VT-3 of repair assembly. NRI
Core Spray Sparger	1980's Through 1994	VT-1	IEB 80-13 (1 MIL) VT-1 of spargers and tee-boxes. NRI.
	4/97-R14	EVT-1, VT-3	Examined tee-box cover plate welds (S1), tee-box to sparger arms (S2), and sparger end caps (S4) to EVT-1. NRI. Examined sparger nozzles (S3) and the sparger piping to VT-3. NRI.
	10/00 - R16	EVT-1, VT-3	Per BWRVIP-18: EVT-1 of all S1, S2 and S4. VT-1 of 50% of S3. NRI.
	10/04 – R18	EVT-1	Sparger to End Cap Welds: 1S4 (7°), 1S4 (183°), 2S4 (7°), 2S4 (183°), 3S4 (3°), 3S4 (187°), 4S4 (3°), 4S4 (187°). NRI.
		VT-1	Nozzle Tack Welds: 3S3 (187-260°), 3S3 (260-003°), 4S3 (187-290°), 4S3 (290-003°). NRI.

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Plant: Dresden Unit 3

			-All 12 sparger brackets and bracket to shroud welds. NRI. -Core Spray Lower Sectional Replacement (all four downcomers) eliminating inspection of the following welds: 1-4S1, 1-4S2a-b.
	11/08 – R20	EVT-1	Sparger to End Cap Welds: 1S4 (7°), 1S4 (183°), 2S4 (7°), 2S4 (183°), 3S4 (3°), 3S4 (187°), 4S4 (3°), 4S4 (187°). NRI.
		VT-1	Nozzle Tack Welds: 1S3 (007-080°), 1S3 (080-183°), 2S3 (007-110°), 2S3 (110-183°). NRI.
			All 12 sparger brackets and bracket to shroud welds. One relevant indication identified. Indication acceptable for one cycle of operation.
	11/10 – R21	VT-1	One sparger bracket to shroud weld which had a previous indication identified in R20. No identified change. Indication acceptable for one cycle of operation.
	11/12 – R22	EVT-1	Sparger to End Cap Welds: 1S4 (7°), 1S4 (183°), 2S4 (7°), 2S4 (183°), 3S4 (3°), 3S4 (187°), 4S4 (3°), 4S4 (187°). NRI.
		VT-1	Nozzle Tack Welds: 3S3 (187-260°), 3S3 (260-003°), 4S3 (187-290°), 4S3 (290-003°). NRI.
			All 12 sparger brackets and bracket to shroud welds. No change observed on previously identified relevant indication.
	11/14 – R23	VT-1	One sparger bracket to shroud weld which had a previous indication originally identified in R20. No identified change.
	11/16 – R24	VT-1	One sparger bracket to shroud weld which had a previous indication originally identified in R20. No identified change.
Attachment Welds	4/94-R13	VT-1	Section XI inspections of jet pump riser brace, dryer, feedwater sparger, core spray, and surveillance capsule holder brackets, performed once per interval. NRI.

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Plant: Dresden Unit 3

	10/00-R16	VT-1	ASME Section XI B-N-2, surveillance capsule holder attachments in beltline. All six sets examined. NRI.
	10/02 - R17	EVT-1	BWRVIP-48 attachments: four dryer lugs, eight feedwater sparger end-brackets, eight Core Spray Piping brackets, attachment weld, pad surface and HAZ of cladding. NRI
	10/04 – R18	EVT-1	Four steam dryer wall support lugs, lug to pad, and pad to vessel attachment welds. Eight feedwater sparger lug to vessel attachment welds. NRI.
		VT-1	Eight feedwater sparger end-bracket lug assemblies. NRI
	11/06 – R19	VT-3	Examined attachment welds for two Core Spray piping brackets and all four steam dryer wall support lugs in accordance with ASME Section XI. NRI
		EVT-1	Inspected piping bracket to piping weld and bracket to vessel attachment weld on 2 core spray piping brackets. NRI
	11/08 – R20	EVT-1 and VT-3	- Examined attachment welds for two Core Spray piping brackets. NRI - Examined surveillance capsule holder bracket attachment welds. NRI
		VT-3	Examined steam dryer and steam separator guide rod attachment welds. NRI
	11/10 – R21	EVT-1	Examined attachment welds for two Core Spray piping brackets and two steam dryer wall support lugs. NRI
	11/12 – R22	EVT-1	Examined attachment welds for all 8 feedwater sparger end bracket attachment welds. NRI
	11/14 – R23	VT-1	Examined attachment welds for all 4 steam dryer support lugs. NRI
	11/16 – R24	VT-1	Examined attachment welds for all 4 steam dryer support lugs. NRI

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Plant: Dresden Unit 3

	11/18 – R25	VT-1	- Examined attachment welds for all 4 steam dryer support lugs. NRI - Examined all six surveillance sample holder upper brackets. NRI
		VT-3	- Examined all six surveillance sample holder lower brackets. NRI - Examined all six dryer and separator guide rod bracket attachment welds. NRI on welds but a gouge was observed on a guide rod cone
Core Shroud	4/94-R13	EVT-1 and UT	Inspections per SIL 572, extensive indications in circumferential welds.
	4/97-R14	EVT-1 and UT	Inspected all shroud repair design reliant structure prior to installation of comprehensive repair (4 GE designed tie-rod assemblies). Inspections consisted of EVT-1 of all ring segment welds (accessible surfaces), UT for minimum ligament of all vertical welds accessible to scanner and EVT-1 for minimum ligament on all accessible surfaces of all vertical welds not accessible to the scanner.
		NA	Installed four tie-rod shroud repair assemblies and four core plate wedges.
	2/99-R15	VT-1	Examined all four tie-rod assemblies and core plate wedges at locations specified by the manufacturer (GE).
	10/00-R16	UT	Examined a 40° segment of H4 to assist in shroud qualification of Core Spray Repair. NRI.
	10/04 – R18	EVT-1	Examined Ring Segment Welds V1-V4 (Shroud Head RSWs), V8-V13 (Top Guide RSWs), and V20-V25 (Core Plate Support RSWs). Historical indications at V23 and V25 revealed no apparent change since last inspection in R14 (indications are not in HAZ. All other RSWs NRI.

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Plant: Dresden Unit 3

	11/06 – R19	UT	GE utilized the Telescoping Shroud Scanner to perform UT on Shroud vertical welds V5-V6, V14-V19, V26-V28. Coverage obtained as follows: V5 – 80.4% V6 – 34.8% V14 – 66.8% V15 – 75.6% V16 – 80.4% V17 – 77.9% V18 – 95.5% V19 – 69.8% V26 – 13.7% V27 – 69.4% V28 – 57.6% One indication identified on V27 (1.8" in length). Indication acceptable for continued operation in accordance with BWRVIP-76.
		EVT-1	Performed one-sided EVT-1 examinations on vertical welds. NRI. Coverage as follows: V7 – 40% V29 – 40% (between H7 and H8 welds) V30 – 0% (between H7 and H8 welds) V31 – 30% (between H7 and H8 welds) V32 – 0% (between H7 and H8 welds)
		VT-3, EVT-1	Performed GE recommended inspections of shroud repair hardware. Scope included inspections to address susceptible areas based on indications found at Hatch. One RI identified due to retainer clip not engage. This retainer clip is redundant and did not require repair.
	11/08 – R20	EVT-1	Examined historical indications at V23 and V25. No apparent change from previous inspection.

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Plant: Dresden Unit 3

	11/10 – R21	EVT-1	Performed one-sided EVT-1 examinations on vertical welds V1, V2, V3, V4, V8, V9, V10, V11, V12, V13, V20, V21, V22, and V24. Horizontal indications were identified in the top guide ring below H2, near V12 and V13. Indications acceptable for one cycle of operation.
	11/12 – R22	EVT-1	Performed one-sided EVT-1 examinations on vertical welds V7, V29, V30, V31 and V32. Inspected previous indications V12, V13, V23 and V25. Indications evaluated as acceptable.
		EVT-1&VT-1	Inspected shroud repair hardware and core plate wedges at all four azimuths. RI-minor wear noted.
	11/14 – R23	EVT-1	- Inspected previous indications V12 and V13 with no change observed. - Inspected latch pins with previous wear on two shroud repair tie rods. Slight increase in wear noted.
	11/16 – R24	UT	Inspected shroud vertical welds V5-V6, V14-V19, V26-V28. One indication identified on V27 (1.8" in length). Indication acceptable in accordance with BWRVIP-76.
		EVT-1	- Inspected vertical welds V1-V4, V8-V13 and V20-V25. Indications noted on V12, V13, V21, V22, V23 and V25. Indications evaluated as acceptable. - Inspected shroud vertical weld V7. NRI
		VT-3	- Inspected latch pins with previous wear on two shroud repair tie rods. Slight increase in wear noted.
	11/18 – R25	EVT-1	- Inspected vertical welds V21, V22 and V29-V32. Indications on V21 and V22 evaluated as acceptable.
		VT-3	- Inspected latch pins with previous wear on two shroud repair tie rods. No change noted on previous indications.
Shroud Support	4/94-R13	UT/VT-1	Access hole cover VT/UT for circ and radial flaws. NRI.

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Plant: Dresden Unit 3

	4/97-R14	EVT-1	Examined H8 and H9 for about 12" at 4 locations of shroud repair hardware attachment areas. NRI.
	2/99-R15	EVT-1	Per BWRVIP-38: Examined H8 and H9 between Jet Pumps 20 and 1 (312°-357°). NRI. Requirements for this inspection cycle are satisfied. NRI.
	10/02- R17	EVT-1	Welds on Access Hole Covers at 155° and 335°. The D3 AHC's have not been repaired. NRI.
	10/04 – R18	EVT-1	Examined H8 and H9 between Jet Pumps 10 and 11 (132°-177°). NRI
	11/06 – R19	EVT-1, VT-3	VT-3 of accessible areas of H9 and EVT-1 of 10% of H9 (between Jet Pumps 10 and 11). NRI.
	11/08 – R20	EVT-1	Examined H8 and H9 between Jet Pumps 20 and 1 (312°-357°). NRI.
	11/10 – R21	UT	Welds on Access Hole Covers at 155° and 335°. The D3 AHC's have not been repaired. NRI.
	11/12 – R22	EVT-1	Examined H8 and H9 between Jet Pumps 20 and 1 (312°-357°) and Jet Pumps 10 and 11 (132°-177°). NRI.
	11/18 – R25	EVT-1	Examined H8 and H9 between Jet Pumps 10 and 11 (132°-177°). NRI.
SLC	10/02 - R17	PT	PT of surface of Safe-end extension and safe-end to nozzle weld. NRI.
	11/06 – R19	PT	PT of surface of Safe-end extension and safe-end to nozzle weld. NRI.
	11/10 – R21	PT	PT of surface of Safe-end extension and safe-end to nozzle weld. NRI.
	11/14 – R23	UT	UT of surface of Safe-end extension and safe-end to nozzle weld. NRI.

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Plant: Dresden Unit 3

Jet Pump Assembly	4/94-R13	VT-1	Hold down beams, beam bolt keepers, lock plates and retainers; restrainer wedges, stops, and adjusting screws, clamp bolts and keepers; riser brace assemblies, adapters and baffle plate welds, sensing lines and sensing line brackets per various SILS. Prior to R13, visually inspect 100% of upper areas of each Jet Pump including beam retainers every other outage.
	4/94-R13	VT-1	Riser brace arm to yoke welds on three upper (secondary) riser braces found cracked. Repairs are not required. No other reportable indications.
			Diffuser to baffle plate welds on all twenty jet pumps. NRI.
	4/97-R14	EVT-1	All ten RS-1, 2, 3, 4 and RS-5. NRI.
	2/99-R15	EVT-1	Medium Priority: 50% of DF-1, MX-1, MX-3 and IN-5 welds. All twenty RB-1, 2, RS-8 and RS-9. NRI. High Priority: 50% of DF-2, AD-1, 2 and 3. NRI.
		VT-1	Examined all twenty WD-1 locations. NRI.
	10/02-R17	EVT-1	Repeat examination of four DF-2 welds to improve coverage. NRI.
			Five RS-9 and RS-10 riser to secondary brace yoke welds, NRI. Eleven secondary brace RB-3 welds per ASME XI and BWRVIP-48. NRI.
	03/03-D3M09	VT-1	Verified acceptable restrainer set-screw gaps when replaced beams (reference Jet Pump Beams section of this report). Aux wedges installed two set-screw locations. The other locations were NRI.
	10/04 – R18	VT-1	Examined jet pump sensing line clamps on jet pumps 1, 2, 3, 10, 11, 12, 13, & 20.

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Plant: Dresden Unit 3

		EVT-1	Examined all twenty WD-1 locations. Noted normal movement of wedges 11 & 20 with no abnormal wear. All other wedges NRI.
			Examined AS-1 (set-screw gaps) on five jet pumps: 8 (Vessel Side, Shroud Side), 9 (VS, SS), 11 (SS), 12 (VS, SS), 20 (VS, SS). No unacceptable gaps were identified (all less than 0.010").
			Examined AS-2 (set-screw tack welds) on five jet pumps: 8 (VS, SS), 9 (VS, SS), 11 (SS), 12 (VS, SS), 20 (VS, SS). Lack of fusion of tack welds was identified on jet pumps and set screws: 9 (VS), 11 (SS), & 13 (VS). Indications noted on the tack welds for 9 and 13 were accepted as-is for one-cycle. Jet pump 11 had a set screw missing from its housing. The set-screw was retrieved, and an auxiliary wedge was installed. Also discovered during the inspection of jet pump 11 was a poor quality tack weld on the swing-gate keeper. The condition of the bolt keeper was accepted for one cycle.
			The auxiliary wedge installed during D3M09 on jet pump 13 was examined and historical cracking was re-identified on the set-screw mounting block. This indication is historical and was caused by the ejection of the inlet-mixer following the failure of a beam-bolt. The indication has been accepted as-is. Also discovered on jet pump 13 was a gap between the vessel side restrainer bracket and the swing gate. The condition of the bracket and swing gate was accepted for one cycle.
			Examined RS-10 & -11 on jet pumps: 2, 3, 4, 12, & 13. NRI. Examined RS-1, 2, & 3 on five jet pump pairs: 1/2, 3/4, 9/10, 11/12, 13/14. NRI.
		UT	Examined MX-3a&b, DF-1, -2 & -3 and AD-1, -2 on jet pumps: 2, 3, 4, 5, 8, 9, 12, 13, 18, & 19. NRI.

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Plant: Dresden Unit 3

	11/06 – R19	EVT-1	Examined RB-1 & 2 on jet pumps: 1, 2, 3, 4, & 20. NRI Examined RS-4 & 5 on jet pump pairs: 9/10, 11/12, 13/14. NRI Examined RS-8 & 9 on jet pump pairs: 1/2, 3/4, 5/6. NRI Examined MX-1 and IN-5 on jet pumps: 1, 2, 3, 4, 5, 11, 12, 13, 14, and 15. NRI
		VT-1	Examined aux wedge on JP 11. RI for slight wear on JP 11 aux wedge. Justified continued operation for one cycle. Examined main wedge WD-1 on JPs 1, 2, 3, 4, and 11 for wedge wear. NRI.
		NA	- Installed new ratchet style swing gate on JP 11 to address degraded keeper tack weld identified in R18. - Staked threads due to cracked tack welds (found in D3R18) and installed aux wedges on JP 9 vessel side and JP 13 vessel side set screws.
	11/08 – R20	EVT-1	Examined RB-3 on JPs 1, 2, 3, 4 and 5. NRI
		VT-1	- Examined aux wedges on JPs 9, 11 and 13. RI for slight wear on JPs 9 and 11 aux wedges. Justified continued operation for one cycle. - Examined AS-1 on JP 9 SS and JP 11 VS. NRI - Examined main wedge WD-1 on JPs 1, 2, 7, 8, 9, 11, 12, 13, 14, 17, 18, 19 and 20 for wedge wear. One RI for a bent main wedge handle. Condition acceptable as-is. - Examined swing gate keeper tack welds on JPs 7, 8, 9, 10 and 20. NRI - Examined JPs 1 and 2 transition pieces and sensing lines to address operating trends. NRI - Examined JP 11 swing gate bolting and ratchets. Swing gate installed in D3R19. NRI

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Plant: Dresden Unit 3

	11/10 – R21	EVT-1	- Examined AD-1, AD-2, AD-3a, AD-3b on jet pumps 1, 6, 7, 10, 11, 14, 15, 16, 17 and 20. NRI - Examined MX-3a and DF-1 on jet pumps 1, 10, 11, 14 and 15. NRI. - Examined MX-3b and DF-2 on jet pumps 1, 6, 7, 10, 11, 14, 15, 16, 17 and 20. NRI. - Examined RS-1, RS-2, and RS-3 on jet pumps risers 5-6, 7-8, 15-16, 17-18 and 19-20. NRI. - Examined RS-8, -9, -10, and -11 on all of the jet pumps. NRI. - Examined RB-1 on jet pumps 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 and 19. NRI.
		VT-1	- Replaced an aux wedge on JP 11. - Examined aux wedge on JP 9. No change to wear identified in R20. - Examined (secondary) riser brace arm to yoke welds on jet pump 19. RI with the condition acceptable as-is. - Examined swing gate latches and welded keepers on jet pumps 4, 5, 6, 15 and 16. NRI - Examined sensing line clamps on jet pumps 1 and 20. NRI - Examined main wedge WD-1 on JPs: 3, 4, 5, 6, 10, 15 and 16 for wedge wear. NRI
	11/12 – R22	EVT-1	- Examined RB-2 welds on jet pumps 9-12 & 19. NRI - Examined RS-4 & RS-5 on JP risers 1/2, 17/18 & 19/20. NRI - Examined RS-2 on JP risers 1/2, 3/4, 9/10, 11/12 & 13/14. NRI - Examined MX-1 welds on JPs 6-10. NRI - Examined RB-3 welds on 5 JPs. NRI - Examined JP-11 BB-2. NRI

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		VT-1	- Examined RB-3 welds on all 20 JPs. NRI - Examined WD-1 on JPs 1, 2, 8, 11, 12 & 14. NRI - Examined swing gate keeper tack welds on JPs 1, 12, 13, 14 & 19. NRI - Examined Aux wedges on JPs 9 & 11. RI - Some wear was observed. - Examined vessel side AS-1 on JP 11. NRI
		VT-3	- Examined IN-5 bolting on JPs 6-10. NRI - Examined slip joint on JP 11. NRI
	11/14 – R23	VT-1	- Examined WD-1 on all jet pumps. RIs for wear on jet pump 9 and bent bail handles on jet pumps 17 and 20. - Examined swing gate keeper tack welds on four jet pumps and swing gate ratchets on one jet pump. NRI - Examined Aux wedges on JPs 9 & 11. RI - Wear was observed with both auxiliary wedges. - Examined vessel side AS-1 on JP 11 and shroud side AS-1 on JP 9. NRI
		VT-3	- Examined sensing line clamps on six jet pumps. RI on JP 12 due to gap between clamp and sensing line standoff bracket. - Examined jet pump 9 slip joint. NRI

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	11/16 – R24	EVT-1	- Examined MX-3a and DF-1 on jet pumps 6, 7, 16, 17 and 20. NRI. - Examined MX-3b on jet pumps 9, 12, 13, 18 and 19. NRI. - Examined AD-1, AD-2, AD-3a and DF-2 on jet pumps 2, 3, 4, 5, 8, 9, 12, 13, 18 and 19. NRI. - Examined RS-1 and RS-3 on jet pumps risers 1-2, 3-4, 9-10, 11-12 and 13-14. NRI. - Examined RS-8 and -9 on jet pumps 11-12, 13-14 and 15-16. NRI. - Examined RS-10 and -11 on jet pumps 1-2, 11-12 and 15-16. NRI. - Examined RB-1 on jet pumps 1, 2, 3, 4 and 20. NRI. - Examined AS-1 on JP 9 shroud side and JP 11 vessel side set screws. NRI.
		VT-1	- Replaced aux wedge on JP 11 and installed slip joint clamps on jet pumps 11 and 12. - Examined aux wedge on JP 9. No change to wear identified in R20. - Examined aux wedge on JP 13. Minor wear noted. - Examined main wedge WD-1 on JPs: 4, 5, 7, 10, 11 and 19 for wedge wear. NRI - Examined main wedge WD-1 on JP 9. No change to previous wear.
		VT-3	- Examined sensing line clamp on JP 12. No change to previous indication.
	11/18 – R25	EVT-1	- Examined RS-2 and RS-3 on jet pumps risers 5-6, 7-8, 15-16, 17-18 and 19-20. NRI.

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		VT-1	- Replaced aux wedge on JP 9. - Examined aux wedges on JPs 11 and 13. No change to previous wear. - Inspected set screw gaps on JPs 9, 11 and 13. NRI - Examined main wedge WD-1 on JPs: 3, 6, 11, 13, 15 and 16 for wedge wear. NRI - Examined main wedge WD-1 on JP 9. No change to previous wear.
		VT-3	- Inspected slip joint clamps on JPs 11 and 12. NRI - Inspected JP 12 sensing line clamp. New RI evaluated as acceptable.
Jet Pump Beams	4/94-R13	UT	Jet pump beams are UT examined each outage using technique capable of detecting cracking at throat and ears. Original group 1 beams.
	4/97-R14	UT	Examined all beams. Two beams with indications replaced. Balance NRI
	2/99-R15	UT	Examined all beams. NRI
	10/00-R16	UT	Two beams with indications replaced with group 2 style beams. Balance NRI.
	03/03-D3M09	NA	Replaced all 17 original beams with weld-less keeper Group 2 beams.
	10/04 – R18	VT-3	Examined 17 group 2 beam bolt retainer mechanisms (weld-less keeper) to ensure all keepers were engaged. NRI.
		EVT-1	Examined 3 group 2 welded keeper style beams. BB-1 and BB-2 on Jet Pumps 5, 8, and 13. NRI.
	11/06 – R19	NA	Pre-emptive replacement of aging beams on JPs 5, 8 and 13 rather than UT examine.
	11/08 – R20	VT-1	- Examined beam ratchet engagement on JPs 5, 8 and 13 after 1 cycle of operation. NRI - Examined beam and ratchet engagement on JPs 1 and 2 to address operating trends. NRI
	11/12 – R22	UT	Examined BB-1, BB-2 and BB-3 on 18 of 20 jet pump beams (Group 2). NRI

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	11/14 – R23	UT	Examined BB-1, BB-2 and BB-3 on jet pump 11 beam (Group 2). NRI
		VT-1	Examined all 20 jet pump beam retainer clips. NRI
LPCI Couplings	NA		
Lower Plenum	4/97-R14	MVT-1	CRD Stub Tube, CRD H7. NRI.
	4/97-R14	MVT-1	ICH/RPV-1 and ICHGT/ICH-1, two inspected from cell H7. NRI.
	10/00-R16	EVT-1	Per BWRVIP-47: examined CRGT-1, 2 and 3 on D10. NRI.
	10/02-R17	EVT-1 and VT-3	Examined 9 CRGT-1, 2 and 3 and FS/GT-ARPIN. NRI. This completes first 5% in 6 years.
	10/04 – R18	VT-3	Bottom Head Drain cleaning project created access for the following examinations: - Examined eight Stub Tube to Vessel Welds (ST/RPV-1) and eight Stub Tube to CRD Housing Welds (CRDH/ST-1) in cells: F7, G6, G7, G8, H7, H8, H9, and J8. NRI. - Inspected two locations for Core Plate to Stiffener Plate Stitch welds: G7 & G8 beam welds. NRI. - Examined two locations for Stiffener Plate to Stiffener Rods welds: G7 and H8 beam tie rods. NRI.
	11/08 – R20	VT-3	Examined 9 CRGT-1 and FS/GT-ARPIN. NRI. This completes 10%.
		EVT-1	Examined 9 CRGT-2 and 3. NRI. This completes 10%.

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	11/10 – R21	VT -3	Installation of a plug in the bottom head drain to support drain line valve maintenance created access for the following examinations from cells G7 and H8: - Examined accessible portions of eight Stub Tube to Vessel (ST/RPV-1) welds, eight Stub Tube to CRD Housing (CRDH/ST-1) welds and eight CRD Housing to Cap (CRDH-1) welds. NRI. - Examined accessible portions of four In-Core Monitor Housing to Vessel (ICH/RPV-1) welds, four In-Core Monitor Housing to In-Core Housing Guide Tube (ICHGT/ICH-1) welds, two In-Core Housing Support Hardware to In-Core Housing Guide Tube (ICHS/ICGT-1) tack welds and four In-Core Housing Support (ICHS-1) hardware tack welds. NRI.
Feedwater Spargers (Not in BWRVIP Scope)	11/06 – R19	VT-1	Inspected all the end bracket pins for tack weld and pin wear. RI – Wear identified between head of pin and bracket on four brackets. Justified operation for one cycle. Inspected sparger repair hardware from D2R18 isokinetic probe retrieval. NRI
	11/08 – R20	VT-1	Inspected all the end bracket pins for tack weld and pin wear. RI – Wear identified between head of pin and bracket on five brackets. Justified operation for one cycle.
	11/10 – R21	VT-1	Inspected all the end bracket pins for tack weld and pin wear. No apparent change in wear from R20.
	11/12 – R22	VT-1	Inspected all the end bracket pins for tack weld and pin wear. Minor increase in wear compared to R21. Performed inspections of spargers, arm welds and t-box welds. RI - Dent on one nozzle.

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	11/14 – R23	VT-1	Inspected all the end bracket pins for tack weld and pin wear. Minor increase in wear compared to R22.
	11/18 – R25	VT-1	Inspected all eight of the end bracket pins for tack weld and pin wear. Minor increase in wear noted on one bracket.
Steam Dryer	10/04 – R18	"Best effort" VT-1	- Examined exterior surfaces including outer hoods, historical repair areas, tie bars and attachment welds, four lifting assemblies, four hold down assemblies, two manway covers, cover plates, fourteen gussets, upper ring welds, vertical guide welds, outlet plenum lower horizontal welds, outlet plenum vertical welds, and perforated plates. Multiple indications identified, including structural fatigue flaws in the outer hood areas. Outer hoods modified to repair cracking. - Examined interior surfaces including: drain channel welds, supports, vertical and horizontal plates, support ring, horizontal cross beams, and horizontal cross beam gussets. Initial start-up steam sample probe discovered missing. Probe located and retrieved from steam separator. Multiple non-structural indications also noted.
		VT-3	Examined interior and exterior skirt. Indications noted.
	11/06 – R19	"Best Effort" VT-1	Performed VT-1 inspection of outer hood welds on old dryer where previous indications had been identified and repaired. NRI.
		NA	Installed new dryer.
	11/08 – R20	"Best Effort" VT-1	Examined critical components on steam dryer after one cycle of operation per GE recommendations. One RI where dryer contacted steam separator guide rod (RI on guide rod also). Dryer and guide rod indications acceptable for one cycle of operation.

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	11/10 – R21	"Best Effort" VT-1 and VT-3	Examined critical components on steam dryer. The RI from R20 where the dryer contacted the steam separator guide rod (RI on guide rod also) showed no change on both the SS guide rod and the SD.
	11/12 – R22	"Best Effort" VT-1 and VT-3	- Examined critical components on steam dryer. The previous RI where the dryer contacted the steam separator guide rod (RI on guide rod also) showed no change. - Examined dryer support lugs. Minor indications noted due to contact with the dryer.
	11/14 – R23	VT-1	- Examined the previous RI where the dryer contacted the steam separator guide rod with no change noted on dryer and guide rod. - Examined all four dryer support lugs. Minor indications noted due to contact with the dryer.
	11/16 – R24	VT-1	- Examined all four dryer support lugs. Minor indications noted due to contact with the dryer.
	11/18 – R25	VT-1	- Examined all four dryer support lugs. Minor indications noted due to contact with the dryer. - Examined trough support welds and cross beam to lifting rod support casting welds on ID and 2 horizontal welds on OD. NRI
Top Guide	4/94-R13	VT-1	Examined beam intersections in five cells in response to industry experience. NRI.
	4/97-R14	VT-1	Per BWRVIP-26, baseline examined all four top guide alignment assemblies. NRI.
		EVT-1	Examined rim to bottom plate weld at the four aligner assembly locations. NRI.
	10/00-R16	VT-1	Examined 0° and 270° top guide alignment assemblies. NRI.
		EVT-1	Examined rim weld 11. NRI.
	10/04 – R18	VT-1	Examined 90° and 180° top guide alignment assemblies. NRI.

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		EVT-1	Examined rim to bottom plate weld at 90° and 180°. NRI.
	11/06 – R19	EVT-1	Examined rim weld from cell 03-34. NRI
	11/08 – R20	VT-1	Examined 0° and 270° top guide alignment assemblies. NRI.
		EVT-1	Examined top guide rim weld. NRI
	11/12 – R22	EVT-1	- Top guide rim weld was inspected at accessible locations. NRI - Top guide grid beams were inspected from 10% of the cells (18 cells). NRI.
		VT-1	The aligner pins and sockets at all four locations. Indications identified at all four aligner blocks. Indications evaluated as acceptable for one cycle.
	11/14 – R23	VT-1	Examined aligner pins and sockets at all four locations. One new indication identified. No change to previously identified indications.
	11/16 – R24	EVT-1	Top guide rim weld was inspected at accessible locations. NRI
		VT-1	Examined aligner pin assemblies at all four locations. One new indication identified. New growth was observed on one of the previously identified indications.
	11/18 – R25	VT-1	Examined aligner pin assemblies at all four locations. New indications observed on three of the four aligner blocks were evaluated as acceptable for two cycles.
Vessel	10/02 – R17	UT	Examined vertical welds SC1A, SC1C, SC2B, SC3A, SC3B, SC3C, SC3D, SC4A, SC4B, SC4C, and SC4D. NRI.
	10/04 – R18	UT	- Examined vertical welds SC1B, SC2A, SC2C, SC3A, and SC3B. NRI. Satisfies third interval Section XI inspection requirements. - Examined two original vessel construction base metal repair areas in beltline as required by Section XI. NRI.
		VT-3	Inspected cladding in accordance with ASME Section XI. NRI.

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	11/06 – R19	VT-3	Inspected the reactor vessel cladding from the shroud flange to the reactor flange in accordance with ASME Section XI. NRI
	11/12 – R22	UT	Examined all 14 vertical welds, the flange to shell circumferential weld and two original vessel construction base metal repair areas in beltline as required by Section XI. All identified indications acceptable per Table IWB-3510-1.
		EVT-1	Examined weld and heat affected zones on four level instrument nozzles. NRI
Nuclear Instrument Dry-tubes (Not in BWRVIP Scope)	4/94 - R13	VT-1	Identified one cracked dry tube (24-37). Replaced. Examined every other outage to date. Per Reutter-Stokes recommendations, have not reached manufacturer's service life.
	11/06 – R19	VT-1	Examined two SRM and four IRM dry tubes from 3 cells to meet SIL 409. NRI
	11/08 – R20	VT-1	Examined two SRM and four IRM dry tubes from 3 cells to meet SIL 409. NRI
	11/10 – R21	VT-1	Examined two SRM and four IRM dry tubes from 3 cells to meet SIL 409. RI identified movement on one IRM between the plunger and the Top Guide. Rub marks were also noted on the plunger. Acceptable as-is.
	11/12 – R22	VT-1	Examined two SRM and four IRM dry tubes from 3 cells to meet SIL 409. NRI
	11/14 – R23	VT-1	Examined two SRM and four IRM dry tubes from 2 opposite cells to meet SIL 409. NRI
	11/16 – R24	VT-1	Examined two SRM and four IRM dry tubes from 2 opposite cells to meet SIL 409. NRI
	11/18 – R25	VT-1	Examined two SRM and four IRM dry tubes from 2 opposite cells to meet SIL 409. Slight spring relaxation noted.

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Steam Separator (Not in BWRVIP Scope)	10/04 – R18	VT-1	Examined shroud head bolt pin and window condition. RI identified minor wear that was evaluated as-is for continued operation. Examined eight standpipe to shroud head welds and eight gusset to ring welds, NRI.
	11/10 – R21	VT-1	Examined shroud head bolt pin and window condition. RI identified minor wear on multiple bolts that was evaluated as-is for continued operation. Replaced two SHBs. One of the two was missing the pin and the other had excessive pin to window wear.
	11/12 – R22	VT-1	Examined shroud head bolt pin and window condition. RI identified minor wear on multiple bolts that was evaluated as-is for continued operation.
	11/14 – R23	VT-1	Examined shroud head bolt pin and window condition. RI identified minor wear on multiple bolts that was evaluated as-is for continued operation.
	11/16 – R24	VT-1	Examined pin and window condition on two shroud head bolts. No change to previous wear.
Piping Welds (BWRVIP-75-A)	11/08 – R20	UT	Performed manual UT on four IGSCC Category C welds and two IGSCC Category A welds. None of these welds were dissimilar metal (DM) welds. No relevant indications identified.
	11/10 – R21	UT	Performed manual UT on six IGSCC Category D welds. Five of these welds were dissimilar metal (DM) welds. No relevant indications were identified.
	11/12 – R22	UT	Performed manual UT on seven IGSCC Category D welds. Four of these welds were on the reactor head spray system and three were on the reactor head vent system. Four of these welds were dissimilar metal (DM) welds. No relevant indications were identified.

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	11/14 – R23	UT	Performed manual UT on nine IGSCC Category C welds. None of these welds were dissimilar metal (DM) welds. No relevant indications were identified.
	11/16 – R24	UT	Performed UT exams on six IGSCC Category D welds. Two were on the HPCI system and four on the ISCO system. All six of these welds were DM welds. Five of the welds had automated exams performed. No relevant indications were identified.
	11/18 – R25	UT	Performed automated UT exams on seven IGSCC Category D welds on the head spray and head vent systems. Four of the seven were DM welds. No relevant indications were identified. Exams were also performed on four Category C welds on the Core Spray and ISCO systems. No relevant indications were identified.
Cast Austenitic Stainless Steel	11/12 – R22	EVT-1	Inspected one of each of the following: fuel support piece; control rod guide tube base; jet pump mixer flange, mixer flare, mixer ring, inlet/mixer nozzle and inlet mixer elbow. NRI
	11/14 – R23	EVT-1	Inspected one of each of the following: fuel support piece; control rod guide tube base; jet pump mixer flange, mixer flare, mixer ring, inlet/mixer nozzle and inlet mixer elbow. NRI
	11/16 – R24	EVT-1	Inspected one fuel support piece and one control rod guide tube base. NRI
	11/18 – R25	EVT-1	Inspected the jet pump mixer flange, mixer flare, mixer ring, inlet/mixer nozzle and inlet mixer elbow on JP 04. NRI
Surveillance Sample Holders	11/18 – R25	VT-1	Inspected the surveillance sample holders at 65° and 275°. Wear observed on 275° bracket accepted as-is. Additionally, the 275° bracket wasn't fully latched and was re-latched.

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Shroud Off-Axis	11/18 – R25	EVT-1	Off-Axis inspections performed on shroud vertical welds V16 and V18 in accordance with EPRI Letter 2016-030. The following details are provided as directed by Section 2.6 of EPRI Letter 2016-030: Inspection Method: EVT-1 Inspection Region: Welds V16 and V18 from the OD Weld Length: V16-87.9", V18-73.9" Approximate peak neutron fluence: V16: 3.26e20 n/cm^2, V18: 2.06e20 n/cm^2 No flaws identified

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	95	UT	Performed ultrasonic examination of the accessible areas. Baseline per BWRVIP- 0I no indication were detected.
	01	UT	Performed ultrasonic examination of the Hl-H7 welds, no indications found.
	10	Phased Array UT	Unable to complete the ultrasonic examination of the accessible areas due to equipment issues. Performed OD EVT-1 inspections to supplement and submitted Deviation Disposition to do the UT exams in 2012. No indications found.
	12	Phased Array UT	Indication on HI weld, approx I" long and 1/8" deep, ID. All other welds no indications.
Access Hole Covers	12	Phased Array UT	Performed ultrasonic examination of 0° and 180° AHC. Two indications found on each AHC up to 70% through wall and 30% around. Evaluated in accordance with BWRVIP-180.
Shroud Support	88/93	UT	Performed ultrasonic examination of the Access Hole Covers, no indications were reported.
	98	VT-3	VT-3 of shroud support.
	99	VT-3	Shroud Support including H-8/H-9 (360 degrees).
	01	UT	Performed ultrasonic examination of the Access Hole Covers, no indications were reported.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray	07	EVT-1	Reinspection per BWRVIP-18 - no indications.
	09	EVT-1	Reinspection per BWRVIP-18 - no indications.
	10	EVT-1	Reinspection per BWRVIP-18 - no indications.
	12	EVT-1	Reinspection per BWRVIP-18 - no indications.
	14	EVT-1	Reinspection per BWRVIP-18 - no indications.
	16	EVT-1	Re-inspection per BWRVIP-18 - no indications.
	18	EVT-1	Re-inspection per BWRVIP-18 - no indications.
Core Spray Sparger	96 (portion every RFO)	VT	Performed Visual Examination (CSVT, VT-3), baseline per BWRVIP-18, no indications were detected. One sparger. One sparger nozzle is inspected every other RFO due to a missing tack weld.
	99	EVT-1	Examined S-1, S-2, and S-4 welds, VT-3 on S-3A/B welds. No indications noted.
	01	EVT-1	Examined S-1, S-2, and S-4 welds, VT-3 on S-3A/B welds. No indications noted.

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	05	EVT-1	Examined S-1, S-2, and S-4 welds, VT-3 on S-3A/B welds. No indications noted.
	09	EVT-1 VT-1	Examined S-1, S-2, and S-4 welds with EVT-1. Examined S-3A/B with VT-1- no indications.
	12	EVT-1 VT-1	Examined S-1, S-2, and S-4 welds with EVT-1. Examined S-3A/B with VT-1-no indications.
	14	EVT-1 VT-1	Examined S-1, S-2, and S-4 welds with EVT-1. Examined S-3A/B with VT-1-no indications.
Top Guide	99	VT-3	Examined nine cells (top general and bottom of grid areas).
	01	VT-1	Inspection of the 1/4" fillet weld on the contour wedge and verified that alignment blocks in place. Also inspect the two holddown assemblies.
	03	VT-3	Examined five cells (top general and bottom of grid areas).
	05	VT-1	Inspection of the 1/4" fillet weld on the contour wedge and verified that alignment blocks in place. Also inspect two holddown assemblies.
	07	VT-1	Performed VT-1 examination of the bottom side of eight grid locations – no indications.
	09	VT-1 VT-3	Performed VT-1 of the Latches at 46° and 226° location. VT-1 of the fillet welds on the contour wedges at 90° and 270°. Was not able to obtain 100% coverage of the fillet welds on the contour wedges due to the fuel being in the way. Will reschedule in 2010. Performed VT-3 of the

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			top guide – no indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Top Guide (Continued)	10	VT-1 VT-3	Performed VT-1 of the Latches at 136° and 316° location. VT-1 of the fillet welds on all contour wedges with shallow indications that were evaluated as acceptable Performed VT-3 of the top guide - no relevant indications.
	14	VT-I	Performed VT-1 of the Latches at 226° location - no relevant indications. Performed VT-1 of the contour wedges and fillet welds at 90° and 270°. Was not able to obtain 100% coverage of the contour wedges and fillet welds due to the fuel bundle being in the way. Will re- schedule exams for 2016.
	16	VT-1	Performed VT-1 of the contour wedges and fillet welds at 90° and 270° and verified that alignment blocks in place. Previous indications identified in 2010 have not changed. An additional shallow indication was found on a contour wedge and on an alignment block.
	18	VT-1	Performed VT-1 of the Latches at 136° and 316° locations. Performed VT-1 examination of the bottom side and corners of five grid locations - no indications.
Core Plate (Rim, etc.)	95	VT-3	Verified 25% core plate bolts were in place.
	98	VT-3	Verified 20% core plate bolts.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	99	VT-3	Examined Fuel support castings in nine cells, no indications.
	01	VT-3	Verified rim hold down bolts 1-54 Examined Fuel support castings in ten cells, no indications.
	03	VT-3	Examined Fuel support castings in five cells, no indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	98	MVT-1	50% of total number of jet pumps, 100% of each inspected - no indications. All hold down beams - no indications.
	99	UT EVT-1	DF-1 on JPs 1, 2, 3, 4, 13, 14, 15, 16, IN-4, MX-2 and WD-1 on JPs 3, 4, 13, and 14, RB-I and RB-2 on JPs 3, 4, 13 and 14. This completes all exams on 8 of 16 JPs.
	01	EVT-1	RB-I, RB-2, RS-I, RS-2, RS-3, RS-6, RS-7, RS-8, RS-9, IN-4, MX-2, WD-1, on JPs 7 and 8. No indications.
	03	EVT-1	RB-I, RB-2, RS-6, RS-7, RS-8, RS-9, IN-4, MX-2, WD-1, DF-2, AD-I, and AD-2 on JPs 5, 6, 9, and 10. RS-I, RS-2, RS-3, DF-2, AD-I, and AD-2 on JPs 5, 6, 9, 10, 11, 12. DF-1 on JPs 5, 6, 7, 8, 9, and 10. No indications. All hold down beams - no indications.

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	07	UT EVT-1 VT-1	Performed UT of all 16 Jet Pump. Holddown beams using GE technique - no indications. AD-I on JPs 15,16 AD-2 on JPs 15, 16 DF-1 on JPs 11, 12, 15, 16 DF-2 on JPs 15, 16 IN-4 on JPs 11, 12, 15, 16 MX-2 on JPs 11, 12, 15, 16 RB-1 on JPs 1, 2, 11, 12, 15, 16 RB-2 on JPs 1, 2, 11, 12, 15, 16 Riser Brace Pad on JPs 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16 RS-1, RS-2, RS-3@ 324° location RS-6 on JPs 11,15 RS-7 on JPs 12, 16 RS-8, RS-9 @252°, 324° locations WD-1 on all 16 JPs. No indications noted from any of the visual examinations.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
		EVT-1 VT-3	Performed EVT-1 on RB-IA, RB-lB, RB-IC, RB-ID ,RB-2A, RB-2B, RB-2C, RB-2D,RS-1, RS-2, RS-3, TS-IA, RS-6, RS-7, RS-8, RS-9, IN-4, MX-2, WD-1, DF-1, DF-2, AD-1, AD-2, on JPs 11 and 12 - no relevant indications. Performed VT-3 on Sensing Line Clamps on JP 11 and standoff on JP 12- no relevant indications.
	18	EVT-1 VT-3	Performed EVT-1 on RS-I, RS-2, RS-3, TS-IA, RS-6, RS-7, RS-8, RS-9, IN-4, MX-2, WD-1, DF-1, DF-2, AD-1, AD-2, on JPs 09 and 10. Performed EVT-1 on MX2 on JPs 01 and 02 and IN4 on JP 09 - no relevant indications. Performed VT-I on WDI for JPs 09, 10, 13, and 16 - no indications.
CRD Guide Tube & Stub Tube	95 (every 10 years)	VT-3	Inspected accessible portions of three guide tubes and three stub tubes, no indication were detected.
	03	VT-3	Inspect CRGT-1, CRGT-2, CRGT-3, and alignment pin on five guide tubes, no indications detected.
	05	VT-3	Inspect CRGT-1, CRGT-2, CRGT-3, and alignment pin on five guide tubes, no indications detected.

Reactor Internals Inspection History

Plant: **Duane Arnold Energy Center**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	07	VT-3	Performed general VT-3 examination of eight locations - no indications.
Dry Tube	88 (6 cycles and then every three cycles)	VT-1 (1 mil wire)	Inspected in 1988 with indications reported, replaced with the new design.
	99	VT-3	Inspected accessible portions of 11 dry tubes, no indications noted.
	07	VT-1	Performed VT-1 of upper 24" of five dry tubes. Note the exam was performed on the accessible areas - no indications.

Reactor Internals Inspection History

Plant: **Duane Arnold Energy Center**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	03	VT-3	Inspected 180 degree guide rod, no indications.
	07	VT-3	Inspected 180 degree guide rod, bracket, and bracket welds - no indications.
	09	VT-3	Inspected the 0° guide rod bracket and bracket welds - noted the previously identified cracked tack weld, no other indications noted.
	16	VT-3	Inspected the 0° guide rod bracket and bracket welds -noted the previously identified cracked tack weld, no other indications noted.
Sample Holder Integral Attachments	98	VT-I VT-3	No indications.
	99	VT-I VT-3	108 and 288 degree examined with no indications.
	01	VT-1 VT-3	108 degree examined with no indications.
	03	VT-I VT-3	36 and 108 degree examined with no indications.
	05	VT-I VT-3	288 degree examined with no indications.
	07	VT-3	108° location - no indications.
	09	VT-3	288° location - no indications.

Reactor Internals Inspection History

Plant: **Duane Arnold Energy Center**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	12	VT-3	All upper brackets - no indications.

Reactor Internals Inspection History

Plant: **Duane Arnold Energy Center**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	14	EVT-1	Performed EVT-1 at the Riser Support Pads of JPs 3 (at 64°), and 4 (at 80°)- no indications.
	16	EVT-1	Performed EVT-1 at the Riser Support Pads of JPs 11 and 12 no indications.
Feedwater Spargers	98	VT-1 VT-3	Indications around flow holes.
	01	VT-1 VT-3	No additional indications.
	05	VT-1 VT-3	No additional indications.
	07	VT-1	Detailed inspection of all four spargers at the following locations due to broken keeper: Vessel Attachment Keeper to pin Handle interface Keeper to Sparger Bracket weld Pin to sparger bracket Pin to wall bracket Sparger Bracket & Bolts Sparger Bracket to Vessel Measurement Sparger to End Plate Jacking Bolts (two spargers only) T-Box to Sparger Welds. Wear was noted in several locations. (details can be provided if requested).

Reactor Internals Inspection History

Plant: **Duane Arnold Energy Center**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer	03	VT-1/3	Inspect per GE SIL644. Indications in Upper Support Ring, Drain Channels, and Access Openings- all indications evaluated "use as is".
	05	VT-1/3	Inspect per GE SIL644 Rev 1. Indications in Drain Channels and Upper Support Ring - all indications evaluated "use-as-is". No change in previous indications.
	07	VT-I	Inspected per BWRVIP-139 (all exterior locations) Indications in Drain Channels, Access Openings and Upper Support Ring. All indications evaluated "use-as- is" for one cycle. Some of the previous indications could not be located and some new indication were identified. (Details can be provided if requested.)
	09	VT-I (89)	Performed examinations per BWRVIP- 139 (all exterior locations). All previously identified indications were noted as "No change". Three new indications were identified. 1) Upper Guide Bracket was observed to have a rolled piece of metal extending out and below the face/comer of the guide channel. 2) Middle weld on Tie Bar #4 was found cracked, and 3) Lower guide bracket, 180° side was found bent. All indications were determined to be acceptable.

Reactor Internals Inspection History

Plant: **Duane Arnold Energy Center**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	12	UT	ASME Section XI, Appendix VIII, Supplement 10 manual exams performed on one (1) Category C dissimilar metal weld - no indications.
	14	UT	ASME Section XI, Appendix VIII, Supplement 10 manual exams performed on three (3) Category C and four (4) Category D dissimilar metal welds - no indications.
	18	UT	ASME Section XI, Appendix VIII, Supplement 10 Automatic Phased Array exams performed on six(6) Category D dissimilar metals welds - no indications.

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud (BWRVIP-76 R1-A)	RF04	VT-1 (1 mil wire)	Inspected: 100% ID welds H2, H3, and, H4; 100% OD welds H1-H7; accessible areas H8 & H9
		VT-1 / VT-3	The only indications identified were two <1" vertical in orientation above the H2 weld at azimuth 125 degrees. These were evaluated against established flaw screening criteria and found acceptable.
	RF05	EVT-1 (1/2 mil wire)	Inspected approximately 60-70 degrees arc on the core shroud in area of previous indications. H2-H4 inspected on shroud ID, H1-H7 inspected on shroud OD. No new indications, no change observed in previous indications above H2 weld.
	RF06	UT	Performed focused phased array UT examination of the H3, H4, H5, and H7 welds utilizing GE's universal carousel.
		EVT-1	A cursory exam was performed on H3 weld to confirm UT results for information only. No new indications and no change was observed in the previous indication above H2 weld.
	RF07	EVT-1	Reinspected the indication above the H2 weld on the inside of the shroud. No change in appearance. The control rod blade was withdrawn to perform the examination.
	RF08	N/A	No inspections performed on the Core Shroud. Inspections were performed on the Shroud Support.
	RF09	N/A	No inspections performed on the Core Shroud. Inspections were performed on the Shroud Support.
	RF10	N/A	No inspections performed on the Core Shroud. Inspections were performed on the Shroud Support.
	RF11	N/A	No inspections performed on the Core Shroud. Inspections were performed on the Shroud Support.

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud (Continued)	RF12	UT	Performed phased array UT examination of the H3, H4, H5 and H7 welds from both sides utilizing AREVA's demonstrated technique. No indication of cracking was identified. Inspection coverage exceeded 60% for all welds with coverage spaced around the entire circumference.
	RF13	N/A	No inspections performed on the Core Shroud. Inspections were performed on the Shroud Support.
	RF14	N/A	No inspections performed on the Core Shroud. Inspections were performed on the Shroud Support.
	RF15	N/A	No inspections performed on the Core Shroud. Inspections were performed on the Shroud Support.
	RF16	N/A	No inspections performed on the Core Shroud. Inspections were performed on the Shroud Support.
	RF17	N/A	No inspections performed.
	RF18	UT	Performed phased array UT examination of the H3, H4, H5, H6 and H7 welds from both sides utilizing GEH's demonstrated technique. No indication of cracking was identified. Inspection coverage exceeded 85% for all welds with coverage spaced around the entire circumference. Off-axis UT examinations performed on a high fluence and low fluence zone near H4 with 5.2% coverage. The GEH technique had not been demonstrated at the time of the exam. No indications identified.
	RF19	N/A	No inspections performed.
Shroud Support (BWRVIP-38) & Access Hole Cover (BWRVIP-180)	RF03	VT-3	Inspected shroud support gusset welds and H8/H9 in conjunction with jet pump inspections. No indications
	RF04	VT-1/VT-3	Inspected areas in conjunction with jet pumps, included were gusset welds H8 and H9. H8 and H9 welds inspected at 0 and 180 degrees with 1 mil wire. No indications.

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Shroud Support (BWRVIP-38) & Access Hole Cover (BWRVIP-180) (Continued)	RF05	EVT-1 (1/2 mil)	Inspected sample area 60-70 degree arc plus 180 degrees location on H8, H9, and gussets. No indications.
	RF06	VT-3	Inspection performed in conjunction with jet pump inspections. Approximately 50% of the gussets and H8 and H9 welds were inspected. This was a best effort exam which ranged from MVT-1 to VT-3 depending on camera angle and lighting. No cleaning was performed. No indications identified.
	RF07	EVT-1	Inspection performed in conjunction with jet pump inspections. Remaining 50% of the gusset welds were inspected. This was a best effort exam which ranged from EVT-1 to VT-3 depending on camera angle and lighting. (Credited as an EVT-1 exam) No cleaning was performed or needed. No indications identified. The H8 and H9 welds were inspected in detail at 0 and 180 Deg. Azimuth to EVT-1 standards where there were no obstructions
	RF08	EVT-1	The H8 and H9 welds were reinspected to achieve required coverage. 22% of both welds were inspected and included the areas at 0 and 180 degrees as well as adjacent to Jet Pumps 2 and 3. Accessible areas on Gussets 1, 3, 11, 12, and 22 were inspected. No indications of cracking identified.
	RF09	EVT-1/VT-1	The H8 and H9 welds were inspected adjacent to Jet Pumps 3 and 4(Coverage obtained 1% and 8.3%). Accessible areas on Gussets 2 and 15 inspected (90% coverage on each obtained). Both access hole covers were inspected (VT-1). No indications identified.
	RF10	EVT-1/VT-1	The H8 and H9 welds were inspected adjacent to Jet Pump 5 (Coverage obtained 1% and 8.3%). Accessible areas on Gussets 7 and 8 inspected (70/90% coverage obtained @VT-1 quality, EVT-1 not credited, CARD 05-20378). No indications identified.

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Shroud Support (BWRVIP-38) & Access Hole Cover (BWRVIP-180) (Continued)	RF11	EVT-1 UT	The H8 and H9 welds were inspected at 0 and 180 degrees as well as several other locations. Coverage obtained was 24% for H8 and 30% for H9. Accessible areas on Gussets 5, 6, 7, 8, 9, 10, 18, and 21 were inspected with 50% to 80% coverage obtained @ EVT-1. No indications identified. A portion of the H9 weld was examined from the vessel outside diameter using a manual technique as required by BWRVIP-104. Approximately 19.6% of weld was examined with no indications.
	RF12	EVT-1	Accessible areas on Gussets 4 and 13 were inspected with 55% to 80% coverage obtained using EVT-1. No indications identified. Both Access Hole covers were inspected per draft BWRVIP -180 requirements. Cracking identified on 0 degree cover. Reference OE 25794.
	RF13	EVT-1	Accessible areas on Gussets 5 and 6 were inspected with 75% coverage obtained using EVT-1. No indications identified. The 0 Degree Access Hole cover was reinspected and no additional cracking was identified. No repair installed.
	RF14	EVT-1	Accessible areas on Gussets 1, 21, and 22 were inspected with 50% - 60% coverage obtained using EVT-1. No indications identified. All 3 welds on the 0 Degree Access Hole Cover were reinspected and no additional cracking was identified. No repair installed.
	RF15	EVT-1	Accessible areas on Gussets 4, 5, 6, 13, 16, and 17 were inspected with 50% to 70% EVT-1 coverage obtained. No indications identified. The H8 and H9 welds were EVT-1 visually inspected from the annulus side with combined coverage at several locations of 15.9% for the H8 weld and 20.5% for the H9 weld. No indications identified.

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Shroud Support (BWRVIP-38) & Access Hole Cover (BWRVIP-180) (Continued)	RF16	EVT-1	Accessible areas on Gussets 11 and 12, as well as the 180° Access Hole Cover were inspected with 90% coverage and no indications were identified. All 3 welds on the 0° Access Hole Cover were re-inspected. No additional cracking was identified and the component was evaluated to be acceptable without repair.
	RF17	EVT-1	Accessible areas on Gussets 14, 15, and 18, were inspected with 35% to 65% coverage and no indications were identified.
	RF18	EVT-1	Accessible areas on Gussets 7, 8, 9, and 10 were inspected with 30% to 60% coverage and no indications were identified. The 0° Access Hole Cover was inspected with 80% coverage with no changes in relevant indication status.
	RF19	EVT-1	Accessible areas on Gussets 2, 3, 19, and 20 were inspected with 30% to 60% coverage. NRI.
Core Spray Piping (BWRVIP-18 R2-A)	Each outage RF01 thru RF04	VT-1 (1mil)	During RF01 two small arc strikes were identified on loop piping. These have been reinspected each outage. No change in condition. Inspections performed per IEB 80-013 and SIL 289. No indication of cracking.
	RF05	EVT-1 (1/2mil)/VT-1	All welds brushed prior to inspection using 1/2 mil wire. Remainder of loop piping inspected without brushing. No indication of cracking.
	RF06	EVT-1	Inspected all welds on both loops of core spray to EVT-1 standards as opposed to BWRVIP-18 requirements of MVT-1. Cleaning assessment was performed – cleaning was not necessary. No indication of cracking.
	RF07	EVT-1	Inspected all welds on both loops of core spray to EVT-1 standards. Cleaning assessment was performed – cleaning was not necessary. No indication of cracking.
	RF08	EVT-1	Inspected all welds on both loops of core spray to EVT-1 standards. Cleaning

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			assessment was performed, cleaning was not necessary. No indication of cracking.
Core Spray Piping (BWRVIP-18 R2-A) (Continued)	RF09	EVT-1	Inspected all target welds on both loops of core spray and sample welds on Div 2 to EVT-1 standards. Cleaning assessment was performed, cleaning was not necessary. No indications of cracking.
	RF10	EVT-1	Inspected all target welds on both loops of core spray and rotating sample welds on Div 2 to EVT-1. Cleaning assessment was performed, cleaning was necessary for selected locations and welds were brushed. No indications of cracking. Inspection coverage reported separately but generally >80%.
	RF11	EVT-1	Inspected all target welds on both loops of core spray and rotating sample welds on Div 1 to EVT-1. Cleaning assessment was performed, cleaning was necessary for selected locations and welds were brushed. No indications of cracking. Inspection coverage reported separately but generally >80%.
	RF12	EVT-1	Inspected all target welds on both loops of core spray and rotating sample welds on Div 1 to EVT-1. Cleaning assessment was performed, cleaning was necessary for selected locations and welds were brushed. No indications of cracking. Inspection coverage reported separately but generally >55%.
	RF13	EVT-1	Inspected all target welds on both loops of core spray and rotating sample welds on Div 2 to EVT-1. Cleaning assessment was performed, cleaning was necessary for selected locations and welds were brushed. No indications of cracking. Inspection coverage reported separately but generally >55%.

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping (BWRVIP-18 R2-A) (Continued)	RF14	EVT-1	Inspected all target welds on both loops of core spray and rotating sample welds on Div 2 to EVT-1. Cleaning was performed for all locations and welds were hydrolazed or brushed. No indications of cracking. Inspection coverage reported separately but generally >60%.
	RF15	EVT-1	Inspected all target welds on both loops of core spray and rotating sample welds on Div 1 to EVT-1. Cleaning was performed for all locations and welds were brushed. No indications of cracking. Inspection coverage reported separately but generally >60%.
	RF16	EVT-1	Inspected all target welds on both loops of core spray and a rotating sample welds on Div 1 with no indications of cracking observed. Brushing was performed on all locations. Inspection coverage is reported separately in Att. 2, but averaged 58%.
	RF17	EVT-1	Inspected all target welds on both loops of core spray and a rotating sample welds on Div 2 with no indications of cracking observed. Brushing was performed on all locations. Inspection coverage is reported separately in Att. 2, but averaged 60%.
	RF18	EVT-1	Inspected a sample of welds on both loops with no indications of cracking observed. Brushing was performed on all locations. Inspection coverage averaged 70%.
	RF19	EVT-1	Inspected a sample of welds on both loops with no indications of cracking observed. Brushing was performed on all locations. Inspection coverage averaged 50%.
Core Spray Sparger (BWRVIP-18 R2-A)	Each outage RF01-RF04	VT-1 (1 mil)	During RF01 one arc strike identified on upper CS sparger. Reinspections have not identified any changes. No indication of cracking
	RF05	VT-1/EVT-1 (1/2mil)	1/2 mil wire used for junction box remainder utilized 1mil wire. No indication of cracking.
	RF06	EVT-1 / MVT-1	Inspected per BWRVIP-18 using EVT-1 for sparger T-box and end caps and MVT-1 for

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			remaining locations. No indications of cracking.
	RF07	EVT-1/VT-1	Inspected per BWRVIP-18 using EVT-1 for sparger T-box welds, end cap welds, drain plug welds, and support brackets and welds, and VT-1 for flow nozzles and tack welds. No indications of cracking identified.
Core Spray Sparger (BWRVIP-18 R2-A) (Continued)	RF08	EVT-1/VT-1	Inspected per BWRVIP-18 using EVT-1 for S1, S2 and S4 welds. Selected S3a, S3b welds inspected using VT-1. Selected S3c welds as well as selected SB bracket welds were inspected using EVT-1 technique. A best effort exam was performed on all accessible areas. No indications of cracking identified.
	RF09	EVT-1/VT-1	Inspected per BWRVIP-18 using EVT-1 for 50% of the S1, S2 and S4 welds and VT-1 for 50% of the S3a, S3b and S3c welds on the same spargers. 9 SB bracket welds were inspected using EVT-1 technique. Coverage for specific welds will be reported separately. No indications of cracking were identified.
	RF10	EVT-1/VT-1	Inspected per BWRVIP-18 using EVT-1 for 50% of the S1, S2 and S4 welds and VT-1 for 50% of the S3a, S3b and S3c welds on the same spargers. 6 SB bracket welds were inspected using EVT-1 technique. Coverage for specific welds will be reported separately but was > 60% for welds and >85% for brackets. No indications of cracking were identified.
	RF11	EVT-1/VT-1	Inspected per BWRVIP-18-A using EVT-1 for 50% of the S1, S2 and S4 welds on the same spargers. 6 SB bracket welds were inspected using VT-1 technique. Coverage for specific welds will be reported separately but was > 50% for welds and >75% for brackets. No indications of cracking were identified.

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF12	EVT-1/VT-1	Inspected per BWRVIP-18-A using EVT-1 for 50% of the S1, S2 and S4 welds on the same spargers. 6 SB bracket welds were inspected using EVT-1 technique. Coverage for specific welds will be reported separately but was > 40% for welds and >75% for brackets. No indications of cracking were identified.
	RF13	EVT-1/VT-1	Inspected per BWRVIP-18-A using EVT-1 for 50% of the S1, S2 and S4 welds on the same spargers. 6 SB bracket welds were inspected using EVT-1 technique. Coverage for specific welds will be reported separately but was > 50% for welds and >70% for brackets. No indications of cracking were identified.
Core Spray Sparger (BWRVIP-18 R2-A) (Continued)	RF14	EVT-1/VT-1	Inspected per BWRVIP-18-A using EVT-1 for 50% of the S1, S2 and S4 welds on the C and D spargers. 6 SB bracket welds and S3 nozzle welds were inspected using VT-1 technique. Coverage for specific welds will be reported separately but was > 40% for welds and >60% for brackets. No indications of cracking were identified.
	RF15	EVT-1/VT-1	Inspected per BWRVIP-18-A using EVT-1 for 50% of the S1, S2 and S4 welds on the A and B spargers. 6 SB bracket welds inspected using VT-1 technique. Coverage for specific welds will be reported separately but was > 40% for welds and >60% for brackets. No indications of cracking were identified.
	RF16	EVT-1/VT-1	Inspected per BWRVIP-18-A using EVT-1 for 50% of the S1, S2 and S4 welds on the A and B spargers. 6 SB bracket welds were inspected using VT-1. Coverage for specific welds is reported separately in Attachment 2 but was > 40% for most welds and > 60% for most brackets. No indication of cracking was identified.

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF17	EVT-1/VT-1	Inspected 50% of the S1, S2 and S4 welds on the A and B spargers using EVT-1 and 6 sparger bracket welds using VT-1. Coverage for specific welds is reported separately in Attachment 2 but averaged 46% for the welds and 50% for the brackets. No indication of cracking was identified.
	RF18	VT-1	Inspected 3 sparger bracket welds using VT-1 with 50% coverage each. No indication of cracking was identified.
	RF19	EVT-1/VT-3	Inspected 50% of the S1, S2, S3, and S4 welds on the lower spargers only. EVT-1 coverage averaged 50%. NRI.
Top Guide (BWRVIP-26-A) & Grid Beams (BWRVIP-183)	RF03	VT-1/VT-3	Inspected 6 locations (RICSIL 059) and rim area 0°-180°. No indications.
Top Guide (BWRVIP-26-A) & Grid Beams (BWRVIP-183) (Continued)	RF04	VT-1/VT-3	Inspected 6 locations (SIL 554) and rim area 0°-360°. No indications.
	RF05	VT-1	Inspected 15 locations (SIL 554). No indications.
	RF06	VT-1	Inspected bottom edge of beams at 11 core locations per SIL 554. No indication of cracking.
	RF07	VT-1	Inspected bottom edge of beams at 8 core locations per SIL 554. No indication of cracking.
	RF08	VT-1	Inspected bottom edge of beams at 5 core locations per SIL 554. No indication of cracking.
	RF09	VT-1	Inspected bottom edge of beams at 6 core locations per SIL 554. No indication of cracking.
	RF10	VT-1/VT-3	Inspected bottom edge of beams at 2 core locations per SIL 554 and rim area 0°-90°. No indication of cracking.
	RF11	VT-1/VT-3	Inspected bottom edge of beams at 2 core locations per SIL 554. No indication of cracking. Inspected 90 degree segment of top guide rim (90°-180°) and no indications were identified.

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF12	VT-1/VT-3	Inspected intersection and bottom edge of beams at 5 core locations per SIL 554. No indication of cracking.
	RF13	EVT-1	Inspected intersection and bottom edge of beams at 5 core locations per BWRVIP-183 utilizing a new visual inspection tool and rim area 0°-90°. No indication of cracking.
	RF14	VT-3	Inspected rim area 0°-180° with no indications identified.
	RF15	EVT-1	Inspected intersection and bottom edge of beams at 5 core locations per BWRVIP-183 utilizing a new visual inspection tool. No indication of cracking. Fabrication related conditions identified on the bottom surface of the plate material at 3 cell locations. Inspected rim area 180°-360° with no indications identified.
	RF16	N/A	No inspections performed in RF16.
	RF17	EVT-1	Inspected intersection and bottom edge of beams at 9 core cell locations per BWRVIP-183 with no indication of cracking.
	RF18	EVT-1	No inspections performed in RF18.
	RF19	EVT-1	No inspections performed in RF19.
Core Plate Rim Bolts (BWRVIP-25)	RF05	VT-1 (1 mil wire)	Inspected 6 core plate bolts located between 100 and 160 degrees and adjacent area. No indications.
	RF06	VT-3	Inspected tops of approximately 20 bolts per SIL 588. No indications identified.
	RF07	VT-3	Inspected tops of approximately 20 bolts per SIL 588. No indications identified.
	RF08	VT-3	Inspected tops of approximately 20 core plate bolts (VT-3) per SIL 588. Did not meet BWRVIP requirements. No indications identified.
	RF09	N/A	No inspections performed. BWRVIP analysis concluded that inspections are not required. (Reference BWRVIP 2003-117 and TJ-2003-01)
	RF10	N/A	No inspections performed. BWRVIP analysis concluded that inspections are not required. (Reference BWRVIP 2003-117 and TJ-2003-01)

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF11	N/A	No inspections performed. BWRVIP analysis concluded that inspections are not required. (Reference BWRVIP 2006-041 and DD-2006-01)
	RF12	N/A	No inspections performed. BWRVIP analysis concluded that inspections are not required. (Reference BWRVIP 2006-041)
	RF13	N/A	No inspections performed. BWRVIP analysis concluded that inspections are not required. (Reference BWRVIP 2006-041)
	RF14	N/A	No inspections performed. BWRVIP analysis concluded that inspections are not required. (Reference BWRVIP 2006-041) BWRVIP 2010- 243 now requires preparation of a Deviation Disposition by 3/31/2011.
	RF15	N/A	No inspections performed. BWRVIP analysis concluded that inspections are not required. Deviation Disposition DD-2011-01 was submitted to BWRVIP 3/30/2011.
	RF16	N/A	No inspections performed in RF16, as justified by Deviation Disposition DD-2011-01.
	RF17	N/A	No inspections performed in RF17, as justified by Deviation Disposition DD-2011-01 Revision 1.
	RF18	N/A	No inspections performed in RF18, as justified by Deviation Disposition DD-2011-01 Revision 1.
	RF19	N/A	No inspections performed in RF19, as justified by Deviation Disposition DD-2011-01 Revision 1.
Standby Liquid Control (BWRVIP-27-A)	RF04	VT-3	Performed a visual inspection from Reactor penetration to shroud support when access was provided during jet pump beam replacement. No indications.
	RF05-RF07	N/A	No inspections performed as access was not provided.
	RF08	VT-2*	Performed enhanced inspection on nozzle area from inside skirt area, but did not remove mirror insulation box from safe-end. No leakage observed.

Reactor Internals Inspection History

Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF09	VT-2*	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed.
	RF10	VT-2*	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed.
	RF11	VT-2*	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed.
	RF12	VT-2*	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed.
	RF13	VT-2*/UT	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed. Performed a manual PDI qualified ultrasonic inspection of the nozzle to safe end weld as well as additional base material of bored material. No indications identified.
	RF14	VT-2*	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed.
Standby Liquid Control (BWRVIP-27-A) (Continued)	RF15	VT-2*	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed.
	RF16	VT-2*	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed.
	RF17	VT-2*	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed.

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF18	VT-2*	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed.
	RF19	VT-2*/UT/PT	Performed enhanced inspection on nozzle area from inside skirt area, and removed cover on the mirror insulation box for the safe-end for direct inspection. No leakage observed. Performed augmented surface PT and manual PDI qualified ultrasonic inspection of the nozzle to safe end weld as well as additional base material of bored material. NRI.
Jet Pump Assembly (BWRVIP-41 R3)	Each outage examine at least 50% through RF05	VT-1/VT-3	Jet pump assemblies are inspected each outage from top to bottom. During RF-04 all (20) hold down beams were replaced as a preventative measure and to avoid performing UT's on the old style/original beams. Inspections are performed to the recommendations of SIL 551, 574, 465 S-1, and RICSIL 078. During RF05 one of the 80 restrainer screw tack welds was found to be cracked. This was evaluated and was not repaired during RF05.
	RF06	MVT-1/VT-3	Performed inspections to the intent of BWRVIP-41 as well as augmented VT-3 of selected areas on jet pumps 1-10. Inspections included all High, Medium and Low Priority locations. Inspected RS-1 and RS-2 welds on jet pumps 11-20. One indication identified on RS-1 weld, 1.75" long. JCO performed prior to start-up. No other new indications identified.
Jet Pump Assembly (BWRVIP-41 R3)	RF07	EVT-1	Performed inspections to the intent of BWRVIP-41 including EVT-1's as well as augmented VT-1 and VT-3's of selected areas on jet pumps 11-20. Inspections included all High, Medium and Low Priority locations. Reinspected previously identified indication on RS-1 weld, 1.75" long that was identified in RF06. No change in indication length or appearance. Existing Flaw Evaluation on hand prepared by GE referenced as

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			acceptance limit. No other indications or changes in previous indications identified.
	RF08	EVT-1	Performed reinspections to the intent of BWRVIP-41 including EVT-1's as well as augmented VT-1 and VT-3's of selected areas on jet pumps 1& 2. Inspections included all High, Medium and Low Priority locations. Reinspected previously identified 1.75" long indication on RS-1 weld for Jet Pumps 7&8 that was identified in RF06. No change in indication length or appearance. Existing Flaw Evaluation on hand prepared by GE referenced as acceptance limit. Inspected all 20 jet pumps per recommendations of SIL 629 and verified no wedge damage (WD-1) as well as full contact with restrainer screws. No damage identified on any location. Reinspected all restrainer screw tack welds with no changes observed.

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Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF09	EVT-1	Performed reinspections to BWRVIP-41 including EVT-1's as well as augmented VT-1 and VT-3's of selected areas on Jet Pumps 3 & 4. Inspections included all High, Medium and Low Priority locations. Reinspected previously identified 1.75" long indication on RS-1 weld for Jet Pumps 7&8 that was identified in RF06. No change in indication length or appearance. Existing Flaw Evaluation on hand prepared by GE referenced as acceptance limit. Inspected all 20 Jet Pump Hold Down Beams by UT for BB1, BB2, and the transition area BB3 using the latest available technique from General Electric. No indications identified on the beams. Reinspected all restrainer screw tack welds, contact area, and wedges after both tack welds on Jet Pump 15 were found cracked. No other damage or indications identified on any location. Jet Pump 15 permanently repaired by the installation of an auxiliary spring wedge. (Reference CARD 03-16929)
Jet Pump Assembly (BWRVIP-41 R3)	RF10	EVT-1	Performed reinspections to BWRVIP-41 including EVT-1's as well as augmented VT-1 and VT-3's of selected welds on Jet Pumps 4, 5, 6, 7, & 8. Reinspected previously identified 1.75" long indication on RS-1 weld for Jet Pumps 7 & 8 that was identified in RF06. No change in indication length / appearance. Existing Flaw Evaluation on hand prepared by GE referenced as acceptance limit. Reinspected auxiliary spring wedge on Jet Pump 15. No other damage or indications identified on any location.

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF11	EVT-1	Performed reinspections to BWRVIP-41 including EVT-1's as well as augmented VT-1 and VT-3's of selected welds on Jet Pumps 7, 8, 9, & 10. Reinspected previously identified 1.75" long indication on RS-1 weld for Jet Pumps 7 & 8 that was identified in RF06. No change in indication length / appearance. Existing Flaw Evaluation on hand prepared by GE referenced as acceptance limit. Inspected all Jet Pump wedges after wear was identified on JP2 restrainer bracket. Performed inspection of other welds on Jet Pump 2 as required by BWRVIP-41. Auxiliary spring wedges installed on Jet Pumps 1 and 2 and a slip joint clamp was installed on Jet Pump 2 to restore integrity. No other damage or indications identified.
Jet Pump Assembly (BWRVIP-41 R3)	RF12	EVT-1	Performed reinspections to BWRVIP-41 including EVT-1's as well as augmented VT-1 and VT-3's of selected welds on Jet Pumps 7, 8, 9, 10, 11, & 12. Reinspected previously identified 1.75" long indication on RS-1 weld for Jet Pumps 7 & 8 that was identified in RF06. No change in indication length / appearance. Existing Flaw Evaluation on hand prepared by GE referenced as acceptance limit. Inspected all 20 Jet Pump Hold Down Beams. Inspected 12 Jet Pump wedges including the wedges and hardware (auxiliary spring wedges and slip joint clamp) installed in RF11. No other damage or indications identified.
	RF13	EVT-1	Performed reinspections to BWRVIP-41 including EVT-1's as well as augmented VT-1 and VT-3's of selected welds on Jet Pumps 7, 8, 9, 10, 13, 14, 15, and 16. Reinspected previously identified indication on RS-1 weld for Jet Pumps 7/8 identified in RF06. No change in indication length or appearance. Existing Flaw Evaluation on hand prepared by GE referenced as acceptance limit. Inspected

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			9 Jet Pump wedges. No other damage or indications identified.
Jet Pump Assembly (BWRVIP-41 R3)	RF14	EVT-1	Performed reinspections to BWRVIP-41 including EVT-1's as well as augmented VT-1 and VT-3's of selected welds on most Jet Pumps including RS-8/9 welds on all pumps. Reinspected previously identified indication on RS-1 weld for Jet Pumps 7/8. No change in indication length or appearance. Existing Flaw Evaluation on hand prepared by GE referenced as acceptance limit. Inspected all 20 Jet Pump wedges. Minor movement noted but no other damage or indications identified.
	RF15	EVT-1	Performed reinspections to BWRVIP-41 including EVT-1's as well as augmented VT-1's of selected welds on several Jet Pumps. Reinspected previously identified indication on RS-1 weld for Jet Pumps 7/8. No change in indication length or appearance. Existing Flaw Evaluation on hand prepared by GE referenced as acceptance limit. Inspected all 20 Jet Pump wedges. No movement noted and no damage or indications identified.
	RF16	EVT-1 / VT-1 UT	Performed EVT-1 exams of selected welds in accordance with BWRVIP-41 Rev. 3 with no indications identified. VT-1 exams performed on all 20 main wedge assemblies. Wedge wear identified on Jet Pump 06; scope expansion performed with no further relevant indications observed and wedge was evaluated to be acceptable without repair. Growth identified during re-inspection of indication on RS-1 weld for Jet Pumps 07/08. Indication was evaluated to be acceptable for two cycles

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			without repair. Ultrasonic examination of all 20 Jet Pump Hold Down Beams (BB1, BB2 and BB3). No indications identified on the beams.
	RF17	EVT-1	Performed EVT-1 exams of selected welds with no indications identified. VT-1 exams performed on all 20 main wedge assemblies. Minor wedge rod wear identified on Jet Pump 01; evaluated to be acceptable without repair. Minor wear identified on Jet Pump 02 Auxiliary Wedge, scope expansion performed with no further relavant indications observed and evaluated to be acceptable without repair. Mitigating clamp installed on the RS-1 weld for Jet Pumps 07/08.
Jet Pump Assembly (BWRVIP-41 R3)	RF18	EVT-1	Performed EVT-1 exams of selected welds with no indications identified. VT-1 exams performed on all 20 main wedge assemblies. Jet Pump 01 Wedge Rod wear obscured by wedge position shift; scope expansion performed with no further relavant indications observed and evaluated to be acceptable without repair. Minor wear identified on Jet Pump 06 Wedge Rod, scope expansion performed with no further relavant indications observed and evaluated to be acceptable without repair. Jet Pump 02 Aux. Wedge shifted leg from restrainer bracket with no change in previous wear; evaluated as acceptable without repair.
	RF19	EVT-1	Performed EVT-1 exams of selected welds with no indications identified. VT-1 exams performed on all 20 main wedge assemblies. Minor wear identified on Jet Pump 11 Wedge

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			Rod; evaluated to be acceptable without repair.
Jet Pump Diffuser (BWRVIP-41 R3)	Each outage through RF05	VT-3	Diffusers will be sample inspected during refueling outages.
	RF06	MVT-1	BWRVIP-41 on Jet Pumps 1-10 except inaccessible areas. No cracking.
	RF07	EVT-1	BWRVIP-41 on Jet Pumps 11-20 except inaccessible areas. No cracking identified. Welds DF-3, AD-1, and AD-2 are inaccessible for inspection.
	RF08	EVT-1	BWRVIP-41 reinspection on Jet Pumps 1 and 2 except inaccessible areas. No cracking identified. Welds DF-3, AD-1, and AD-2 are inaccessible for inspection.
Jet Pump Diffuser (BWRVIP-41 R3)	RF09	EVT-1	BWRVIP-41 reinspection on Jet Pumps 3 and 4 except inaccessible areas. No cracking identified. Welds DF-3, AD-1, and AD-2 are inaccessible for EVT-1 visual inspection, VT-3 performed. (TJ-2003-02 prepared as justification)
	RF10	EVT-1	BWRVIP-41 reinspection of selected DF-1 and DF-2 welds on Jet Pumps 5, 6, 7, & 8. Performed access study for future performance of UT examinations of welds DF-3, AD-1, and AD-2. These welds are inaccessible for visual inspection. VT-3 performed. No indications identified (Reference TJ-2003-02)
	RF11	EVT-1 UT	BWRVIP-41 reinspection of selected DF-2 welds on Jet Pumps 9 & 10. Performed of UT examinations on a portion of a total of 17 DF-3, AD-1, and AD-2 welds using specialized tooling. These welds are inaccessible for visual inspection. No indications identified (Reference DD-2006-02)

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF12	EVT-1 UT	BWRVIP-41 reinspection of selected DF-1 and 2 welds on Jet Pumps 6, 11, & 12. No UT examinations performed during RF12 due to tooling failures. These welds are inaccessible for visual inspection. (Reference DD-2006-02)
	RF13	EVT-1 UT	BWRVIP-41 reinspection of selected DF-1 and 2 welds on Jet Pumps 7, 13, & 14. No UT examinations performed during RF13 due to tooling failures. These welds are inaccessible for visual inspection. (Reference DD-2006-02)
	RF14	EVT-1 UT	BWRVIP-41 reinspection of selected DF-1 and 2 welds on Jet Pumps 7, 8, 9, and 13-18. No indications identified. Completed baseline UT examinations on all 20 Jet Pumps Diffuser/Adapter DF-3, AD-1 and AD-2 welds, (60 welds) since these welds are inaccessible for visual inspection. Deviation Disposition is no longer needed.
Jet Pump Diffuser (BWRVIP-41 R3)	RF15	EVT-1	BWRVIP-41 reinspection of selected DF-1 and 2 welds on Jet Pumps 10, 19, and 20. No indications identified.
	RF16	EVT-1	BWRVIP-41 re-inspection of selected DF-1 and 2 welds on Jet Pumps 01, 02, and 11. No indications identified.
	RF17	EVT-1	BWRVIP-41 re-inspection of selected DF-1 and 2 welds on Jet Pumps 03, 04, and 12. No indications identified.
	RF18	EVT-1 / UT	BWRVIP-41 re-inspection of selected DF-1 and 2 welds on Jet Pumps 05, 06, 07, 08, 13, and 14. No indications identified. UT performed on DF-3, AD-1, and AD-2 on Jet Pumps 01, 02, 03, 04, 07, 08, 17, 18, 19, 20 with no relevant indications observed.
	RF19	EVT-1	BWRVIP-41 re-inspection of selected DF-1 and 2 welds on Jet Pumps 09, 10, & 15. No indications identified.

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
CRD Guide Tube (BWRVIP-47-A)	RF04	VT-3	Inspected lower portion of peripheral guide tubes and stub tubes when access was provided during jet pump hold down beam replacement. No indications identified.
	RF07	EVT-1 / VT-3	Performed best effort exam on CRGT-3 as weld was not visible on inside of tube. CRGT-2 not accessible due to flow and ARPIN was not felt to be accessible. No indications identified.
	RF08	EVT-1 / VT-3	Performed best effort exam on CRGT-3 as weld was not visible on inside of tube. CRGT-2 not accessible due to flow and FS/GT-ARPIN was not felt to be accessible. No indications identified.
	RF09	EVT-1 / VT-3	Performed exams on CRGT-1, CRGT-2, CRGT-3, and FS/GT-ARPIN at 10 Control Rod Guide Tubes/locations. No indications identified.
	RF10	N/A	No inspection performed in RF10.
	RF11	N/A	No inspection performed in R11.
	RF12	VT-3	Performed exams on CRGT-1 and FS/GT-ARPIN at 5 Control Rod Guide Tubes/locations. CRGT-2 and CRGT-3 not performed or credited due to high flow conditions. No indications identified.
	RF13	N/A	No inspections performed in RF13.
CRD Guide Tube (BWRVIP-47-A)	RF14	EVT-1 / VT-3	Completed all remaining baseline inspections on the Control Rod Guide Tubes. Inspections performed on (4) CRGT-1, and FS/GT-ARPIN locations and on (9) CRGT-2 and CRGT-3 locations. One manufacturing flaw identified that did not impact the functionality of the component.
	RF15	N/A	No BWRVIP required inspections performed in RF15.
	RF16	N/A	No BWRVIP required inspections performed in RF16.
	RF17	N/A	No BWRVIP required inspections performed in RF17.
	RF18	N/A	No BWRVIP required inspections performed in RF18.

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF19	EVT-1	Performed opportunistic inspections of CRGTs 30-27 and 30-31. NRI.
CRD Stub Tube * (BWRVIP-47-A)	RF04	VT-3	Inspected lower portion of peripheral guide tubes and stub tubes when access was provided during jet pump hold down beam replacement. No indications identified.
	RF19	VT-3	Performed opportunistic inspections of Stub Tubes at cell locations 30-27 and 30-31. NRI.
In-Core Housing * (BWRVIP-47-A)	RF04	VT-3	Small portion visible during jet pump beam replacement. No indication of degradation.
	RF19	VT-3	Performed opportunistic inspections of ICMH 32-29. NRI.
Dry Tube * (BWRVIP-47-A)	Each outage through RF05	VT-1	9 of 12 tubes found not completely seated. Performed all inspections per SIL 409 and RICSIL 073. No indications of cracking.
	RF06	VT-1	Reinspected 12 dry tubes. No change from previous condition. No cracking.
	RF07	VT-1	Inspected all 12 original design Dry Tubes. No change from previous conditions identified. No cracking identified.
	RF08	VT-1	Inspected all 12 original design Dry Tubes from two sides. No change from previous conditions identified. No cracking identified.
	RF09	VT-1	No inspections performed in RF09.
	RF10	VT-1	Inspected all 12 original design Dry Tubes from two sides. Linear indications identified on 7 tubes in the collar region above the pressure boundary weld. Evaluated as acceptable for one cycle of operation. Plan to replace in RF11. (Reference CARD 04-25703)
Dry Tube * (BWRVIP-47-A)	RF11	VT-1	Replaced all 12 Dry Tubes in RF11. Performed baseline VT-1 and verified proper engagement in Top Guide.
	RF12	N/A	No inspections performed in RF12.
	RF13	N/A	No inspections performed in RF13.
	RF14	N/A	No inspections performed in RF14.
	RF15	N/A	No inspections performed in RF15.
	RF16	N/A	No inspections performed in RF16.
	RF17	N/A	No inspections performed in RF17.

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Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF18	N/A	No inspections performed in RF18.
	RF19	N/A	No inspections performed in RF19.
Instrument Penet.* (BWRVIP-49-A) (BWRVIP-41 R3)	Each outage through RF04	VT-3	Inspected jet pump sensing lines and brackets each outage.
	RF04	VT-3	SLC and peripheral bottom head penetrations inspected. No indications.
	RF06	VT-3	Inspected JP sensing lines for pumps 1-10. No indications.
	RF07	VT-3	Inspected JP sensing lines for pumps 11 thru 20 only. No indications.
	RF08	VT-3	Inspected JP sensing lines for Pumps 1 & 2 only. No indications.
	RF09	VT-3	Inspected JP sensing lines for Pumps 3 & 4 only. No indications.
	RF10	VT-1	Inspected JP sensing lines for Pumps 5, 6, 7, 16, & 17. No indications
	RF11	VT-1	Inspected JP sensing lines for Pumps 6, 7, 16, & 17. No indications.
	RF12	VT-1	Inspected JP sensing lines for Pumps 6, 7, 11, 12, 16, & 17. No indications.
	RF13	VT-1	Inspected JP sensing lines for Pumps 6, 7, 13, 14, 16, & 17. No indications.
	RF14	VT-1	Inspected JP sensing lines for Pumps 6, 7, 15, 16, 17, & 18. No indications.
	RF15	VT-1	Inspected JP sensing lines for Pumps 6, 7, 16, 17, 19, & 20. No indications.
	RF16	VT-1	Inspected JP sensing lines for Pumps 1, 2, 6, 7, 16, & 17. No indications.
Instrument Penet.* (BWRVIP-49-A) (BWRVIP-41 R3)	RF17	VT-1	Inspected JP sensing lines for Pumps 3, 4, 6, 7, 16, & 17. No indications.
	RF18	VT-1	Inspected JP sensing lines for Jet Pumps 05, 06, 07, 08, 16, & 17 with no relevant indications noted.
	RF19	VT-1	Inspected JP sensing lines for Jet Pumps 06, 07, 09, 10, 16, & 17. NRI.

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Vessel ID Brackets (BWRVIP-48-A)	Each outage through RF05	VT-1/VT-3	Inspect sample population each outage. We have inspected most brackets each outage (core spray, feedwater). Jet pump riser brace, steam dryer support lugs, guide rod brackets and specimen holder brackets are sample inspected. No indications of cracking identified.
	RF06	EVT-1	6 feedwater brackets. All core spray piping brackets. 4 steam dryer brackets 1 guide rod bracket 1 specimen bracket No indication of cracking identified.
	RF07	EVT-1	6 feedwater brackets. All core spray piping brackets. 4 steam dryer brackets 1 guide rod bracket No indication of cracking identified.
	RF08	EVT-1	6 feedwater brackets. All core spray piping brackets. 4 steam dryer brackets 1 guide rod bracket Surveillance holder and Brackets @ 30 az. No indication of cracking identified.
	RF09	EVT-1	6 Feedwater brackets. 4 Core Spray piping brackets. 1 Jet Pump riser brace (Jet Pump 3 and 4) No indication of cracking identified.
	RF10	EVT-1	6 Feedwater brackets. 3 Core Spray piping brackets. 1 Surveillance Holder bracket 4 Steam Dryer Support brackets 4 Steam Dryer Hold Down 1 Guide Rod Bracket 1 Jet Pump riser brace (Jet Pump 5 and 6) No indication of cracking identified.
	RF11	N/A	No inspections performed in RF11.

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Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Vessel ID Brackets (BWRVIP-48-A)	RF12	EVT-1/VT-1	6 Feedwater Sparger bracket sets. 1 Surveillance Holder bracket 4 Steam Dryer Support brackets 1 Guide Rod Bracket 2 Jet Pump riser braces (Jet Pumps 7, 8, 9, & 10). No indication of cracking identified.
	RF13	N/A	No inspections performed in RF13.
	RF14	EVT-1/VT-1	3 Feedwater Sparger bracket sets. 2 Core Spray Piping Brackets 1 Surveillance Holder bracket 4 Steam Dryer Support brackets 1 Guide Rod Bracket 2 Jet Pump riser braces (Jet Pumps 1/ 2, and 11/12). No indication of cracking identified.
	RF15	EVT-1/VT-1	Inspections performed on 3 Feedwater Sparger bracket sets and 1 Guide Rod Bracket. No indications identified.
	RF16	EVT-1/VT-1	Inspection performed on 1 Surveillance Sample Holder Bracket. No indications identified.
	RF17	EVT-1/VT-1	2 Feedwater Sparger bracket sets (four individual brackets) 4 Core Spray Piping Brackets 4 Steam Dryer Support Brackets 4 Steam Dryer Holddown Brackets 1 Guide Rod Bracket 1 Jet Pump Riser Brace. No indication of cracking identified.
	RF18	EVT-1/VT-1	3 Feedwater Sparger bracket sets (six individual brackets) 1 Surveillance Holder Bracket 1 Guide Rod Bracket 1 Jet Pump Riser Brace. No indication of cracking identified.
	RF19	EVT-1/VT-1	4 Steam Dryer Support Brackets 1 Feedwater Sparger Bracket (two individual brackets) 3 Surveillance Sample Holder Brackets (2018-043) No relevant indications.
LPCI Coupling	N/A	N/A	Fermi does not have a LPCI Coupling

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Shroud Head Bolts/Shroud Head	RF04	UT/VT	16 had indications, 17 replaced during RF04.
Shroud Head Bolts/Shroud Head	RF05		Remaining bolts replaced (31) during RF05 as a preventative measure. All 48 are now new style.
	RF06	VT-3	Bolts 1-24 (of 48). No indication of cracking.
	RF07	VT-3	Bolts 25-48 (of 48). No indication of cracking or damage. Springs were left compressed on 20 of the 24 inspected.
	RF08	VT-3	Bolts 1-24 (of 48). No indication of cracking or damage
	RF09	VT-3	Bolts 23 and 25-48 (of 48). No indication of cracking or damage. All retainer springs verified to be functioning properly.
	RF10	VT-3	Bolts 1-24 (of 48). Inspected North 1/3rd of Shroud Head/Separator and 2 lifting lugs. No indication of cracking or damage
	RF11	VT-3	Inspected Bolts 25-48 (of 48) and inspected Center 1/3rd of Shroud Head/Separators. No indication of cracking or damage.
	RF12	VT-3	Bolts 1-24 (of 48). Inspected South 1/3rd of Shroud Head/Separator and 2 lifting lugs. All mid support ring gussets were inspected and small short cracks were identified on 3 of the 24 gussets. No repairs were required. Ref. OE 25795.
	RF13	VT-3	Bolts 25-48 (of 48). Inspected North 1/3rd of Shroud Head/Separator and 2 lifting lugs. No changes identified in previous indications identified in RF12. No other indications identified.
	RF14	VT-3	Bolts 1-24, 27, 30, & 33 (of 48). Inspected Center 1/3rd of Shroud Head/Separator. No changes identified in previous indications and no new indications identified.
	RF15	VT-3	Inspected Bolts 25-48 and 2 (of 48). Inspected South 1/3rd of Shroud Head/Separator. No changes identified in previous gusset indications and no new indications identified.

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Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF16	VT-3	Inspected Bolts 1-12 (of 48) and the North 1/3rd of Shroud Head/Separator. No new indications were identified.
Shroud Head Bolts/Shroud Head	RF17	VT-3	Inspected bolts 13-24 (of 48). Minor pin & window wear identified on bolts 21 & 23, evaluated to be acceptable without repair. Replaced bolts 2 & 33 due to their inability to latch. Inspected the Center 1/3rd of the Separator and identified one tie bar with a severed attachment weld on one end. The tie bar was removed to preclude generation of a loose part (technical justification from OEM obtained to support acceptance of one missing tie bar).
	RF18	VT-3	Reinspected bolts 21 & 23 with no change in condition recorded. Normal inspections included bolts 25-36. Minor pin wear on bolts 31 & 35; evaluated acceptable without repair. Pin and window wear observed on bolts 34 & 36; evaluated acceptable without repair. No other indications.
	RF19	VT-3	Reinspected bolt 36; no change in condition. Normal inspections included bolts 37-48; NRI. Examined North 1/3rd of Separator; NRI.
Steam Dryer (BWRVIP-139-A)	RF08 & Prior		Not previously reported
	RF09	VT-3	Inspected approximately 1/3 of dryer including hood welds and cover plate welds. (Ref. SIL 644) No indications of additional cracking identified.
	RF10	VT-1/VT-3	Inspected approximately 50% of dryer including all inner hood vertical welds as recommended in SIL 644, Supplement 1, and Revision 1). Several new indications were identified near welds due to new locations being inspected and the change in technique. Indications were noted at base of inner hood vertical welds. Reference CARD 04-25416 and also OE #17600. No changes were identified on previously recorded indications.

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF11	VT-1/VT-3	Inspected approximately 50% of dryer including all inner hood vertical welds as recommended in SIL 644, Revision 1 and BWRVIP-139. Several new indications were identified near welds due to new locations being inspected and the change in technique. Indications previously noted on hood welds in RF10 were reinspected and no changes were noticed.
Steam Dryer (BWRVIP-139-A)	RF12	VT-1/VT-3	Inspected approximately 50% of dryer including inner hood vertical welds as recommended in BWRVIP-139. Several new small indications were identified near welds due to new locations being inspected and the change in technique and camera angles used. Indications previously noted on hood welds were reinspected and no changes were noticed.
	RF13	VT-1/VT-3	Inspected approximately 20% of dryer including "F" Bank welds and a sampling of other locations following reinspection guidelines contained in NRC SE to BWRVIP-139. One new indication identified in support ring.
	RF14	VT-1/VT-3	Inspected approximately 20% of dryer including "E" Bank welds and a sampling of other locations following reinspection guidelines contained in BWRVIP-139-A. No new indications identified.
	RF15	VT-1/VT-3	Inspected approximately 20% of dryer including "D" Bank welds and a sampling of other locations following reinspection guidelines contained in BWRVIP-139-A. No new indications identified.
	RF16	VT-1/VT-3	Inspected approximately 20% of dryer including "C" Bank welds and a sampling of other locations following reinspection guidelines contained in BWRVIP-139-A. Indication newly identified on interior vane bank weld HE-C-2-1; evaluated to be acceptable without repair.

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer (BWRVIP-139-A)	RF17	VT-1/VT-3	Inspected approximately 20% of dryer including "B" Bank welds and a sampling of other locations following reinspection guidelines contained in BWRVIP-139-A. Indication on interior vane bank weld HE-C-2-1 identified in RF16 re-inspected with no changes observed. 24 capture plate assemblies installed to cover all tie rod nut washer locations. Vertical drain channel welds premptively increased from 1/8" to 1/4".
	RF18	VT-1/VT-3	Inspected approximately 20% of dryer including "A" Bank welds and a sampling of other locations following reinspection guidelines contained in BWRVIP-139-A. Indication on interior vane bank weld HE-C-2-1 identified in RF16 re-inspected with no changes observed. 24 capture plate assemblies reinspected with no new indications. New wear at 94° Seismic Support Block at interface with RPV Support Block; evaluated as acceptable without repair.
	RF19	VT-1/VT-3	Performed VT-1inspections of approximately 20% of dryer including "F" Bank welds and a sampling of other locations following reinspection guidelines contained in BWRVIP-139-A. Upper support ring indication newly identified near DC-C-3 weld; evaluated as acceptable without repair along with revisited flaws. Additional VT-3 exams performed on inner vane bank end panels and all of vane bank A (including cover plate) as part of Moisture Carryover investigation - NRI.
Dissimilar Metal Welds (BWRVIP-75-A)	RF11 & Prior	UT	Not previously reported (reference BWRVIP Letter 2008-089)
	RF12	UT	Performed ultrasonic examinations on 4 Category B DM welds that contain alloy 82/182 using automated PDI qualified techniques and procedures. Since >90% coverage was not obtained on two welds, 2 additional welds were selected and >90%

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			volume coverage was obtained. No indications of cracking identified.
Dissimilar Metal Welds (BWRVIP-75-A)	RF13	UT	Performed ultrasonic examinations on 5 Category B DM welds that contain alloy 82/182 using automated and manual PDI qualified techniques and procedures. No indications of cracking identified.
	RF14	UT	Performed ultrasonic examination of 1 Category B DM weld that contained alloy 82/182 using manual PDI qualified technique and procedure. No indications of cracking identified.
	RF15	UT	Performed ultrasonic examination of 1 Category B DM weld that contained alloy 82/182 using manual PDI qualified technique and procedure. No indications of cracking identified.
	RF16	UT	Performed ultrasonic examination of 3 Category B DM welds using manual PDI qualified technique and procedure. No indications of cracking identified.
	RF17	UT	Performed ultrasonic examination of 4 Category B DM welds using PDI qualified phased array technique and procedure. No indications of cracking identified.
	RF18	N/A	No inspections performed in RF18.
	RF19	UT	Performed ultrasonic examination of 3 Category B DM welds using PDI qualified phased array technique and procedure. No indications of cracking identified.
Bottom Head Drain Line (BWRVIP-205)	RF16	RT	Deviation Disposition DD-2014-01 issued to support not completing radiography on the first elbow and piping immediately downstream of the reactor vessel in RF16. RT was performed on straight piping further downstream with no evidence of flow accelerated corrosion observed.

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Plant: Fermi 2

Components in BWRVIP Scope (Current Guidelines)	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	RF17	RT	No inspection performed; examination will be performed in RF18 as reported in Deviation Disposition DD-2014-01.
	RF18	RT	Radiograph of first elbow and piping immediately downstream of RPV indicates no considerable corrosion wear has occurred. No signs of foreign material blockage. Socket weld fitting gaps remain fully intact.
*VT-2 leakage inspections have been and are performed on all RPV Instrumentation Nozzles and Piping Nozzles each refuel outage. An enhanced leakage inspection is performed on all locations to ensure no pressure boundary leakage. Inspections are performed in the annulus area adjacent to the vessel skirt, and are performed under vessel to ensure that any leakage identified is not from welded connections. Flange leakage from CRDM's is recorded, evaluated, and repaired if necessary. Mirror insulation is opened for SLC safe end and bottom head VT-2 examinations.			

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Shroud	1994 to present	UT, EVT-1 VT-3 For Shroud Tie Rods	94/95 Outage: Planar flaws on H2, 35" length intermittent (ID/OD) less than 0.75" depth by UT; two small planar flaws on H3, 1.42" length (ID/OD) by UT. A calculated 136" of vertical weld were inspected by EVT-1 or UT with no relevant indications. 96 Outage: Crack like indications on H2, 55" length intermittent (OD) by EVT-1. This cracking is being mitigated by the shroud repair from 94/95 outage with 10 tie-rods; vertical crack like indications on SV5A intermittent (OD) totaling 6-3/4" in length out of total 92", and two horizontal ½" each (one OD and one ID). Crack like indications were less than 10% of weld length and are within allowable per BWRVIP-07. Shroud inspections included 25% vertical welds with 50% at beltline areas, and 3 tie-rods. A calculated 286" of vertical welds were inspected. No relevant indications on other welds. Tie-rod assemblies were found acceptable.
	1998 (R13)	EVT-1	Baseline completed per BWRVIP-07 Guidelines (by EVT-1) for all vertical welds. 100% of beltline shroud welds inspected in R13. Relevant indications found in 5 welds as follows: *SV5A OD-There are 6 indications with a combined length of 9.3 inches. *SV5B OD-There are 18 indications with a combined indication length of 45.8 inches. *SV6A OD-There is 1 indication that is measured to be 1" long. *SV6B ID-There is 1 indication in the weld which is measured to be 0.8 inches

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			long. *SH4 Indication-Indication is 3 inches from SV5A ID and is 6 inches long and goes across the SH4 horizontal weld. No relevant indications noted on other vertical welds.
	2000 (R14)	EVT-1	Re-inspected per BWRVIP-76 Guidelines: Vertical Welds SV5A, SV5B, SV6A and SV6B. Relevant indications found in these welds are as follows: *SV5A OD-There are 7 indications total with a combined indication length of 11.7" vertical and 3.3" circ. *SV5B OD-There are 19 indications total with a combined indication length of 50.7" vertical. *SV6A OD-There is one vertical indication that is measured to be 1" long. *SV6B ID-There is one vertical indication in the weld measured to be 1.25" long. *SH4 ID-There is 2 vertical indications across SH4 with total combined length of 6.4". The closest indication is 3" from SV5B. This indication is branching out near the bottom portion.
	2002 (R15)	EVT-1	Re-inspected by BWRVIP-76 Guidelines: Vertical Welds SV2B, SV5B, and SV8A; and Radial Ring Welds SV3A and SV3D. Relevant indications were only noted on the SV5B weld, as follows: • SV5B ID and OD. There appears to be no discernable changes this outage affecting the cracks length from R14; though one additional indication is noted on the ID CCW side of the

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			weld approximately ½" long. This indication may be associated with indications on the opposite side (OD) at the same location.
	2004 (R16)	EVT-1	Inspected Vertical Welds SV2A, SV8C, SV9A, SV9B and SV9C. No relevant indications noted.
	2006 (R17)	UT	Inspected Vertical Welds SV4A, SV4B, SV5A and SV5B. No relevant indications noted for welds SV4A and SV4B. For Welds SV5A and SV5B, there is close correlation of flaws from previously seen by EVT-1 in R14, with limited crack growth and no through wall indications. Identified some additional (short intermittent) flaws at Weld SV5A. All indications were satisfactorily disposition
		EVT-1	Inspected Vertical and/or Radial Welds SV3B, SV3E, SV6A, SV6B and SV8B. Previous indications were observed in Welds SV6A and SV6B with no apparent change since R14.
		EVT-1	Linear indications (<1/2" length) were observed in the upper section of the shroud where the slot was EDM'd for the tie-rod bracket support. The indications are located at 8 out of 10 tie-rod locations. The indications were satisfactorily disposition as having no effect on the structural integrity of the load path between the shroud and the tie-rods for applied vertical or radial loads.
	2008 (R18)	EVT-1	Inspected Vertical/Radial welds SV2B, SV3A, SV3C, SV3F, SV7B, SV7C and SV7E. Inspection included 100% of accessible area of the ID/OD. No

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			relevant indications were noted.
		EVT-1	Re-inspected indications identified in R17 on the shroud ring segment in locations EDM'd for Tie Rod upper supports. No change was noted from R17 results.
		EVT-1	Inspected previously recorded flaw on the shroud ID @ SH4 near SV5B. The inspection revealed no changes in size and configuration from the previous inspection in 2002. This inspection was performed per an INPO recommendation from the 2008 BWRVIP review visit to assist the industry in understanding the flaw mechanism-potentially irradiation – assisted corrosion cracking (IASCC).
	2010 (R19)	EVT-1	Inspected Vertical/Radial welds SV2A, SV7A, SV7D, SV8A, SV8C, SV-9A, SV-9B and SV-9C. Inspection included 100% of accessible area of the ID/OD. No relevant indications were noted.
	2012 (R20)	EVT-1	Inspected Vertical/Radial welds SV-3B, SV-3E, SV-6A, SV-6B, and SV-8B. Inspection included 100% of the accessible area of the ID/OD with no relevant indications noted.
		EVT-1	Inspected previously flawed SV-5B @ SH4. The inspection revealed no changes in size of the flaws discovered in 2002.
	2014 (R21)	EVT-1	Inspected accessible areas of Radial Welds SV-3A, 3C, 3D, 3F, 7B, 7C, 7E from ID/OD. Inspected accessible area of Vertical Weld SV-2B from ID/OD. No relevant indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	2017 (R22)	EVT-1	Inspected accessible areas of Vertical/Radial Welds SV-2A, SV-7A, SV-7D, SV-8A, SV-8C from OD side. No relevant indications noted.
		Off-Axis EVT-1	Inspected SV-2A, SV-2B per EPRI Letter 2016-030. No relevant indications noted.
		Off-Axis UT	Inspected SV-5B/H4 interface per EPRI Letter 2016-030. The UT examination identified two indications across the H4 weld, in a semi-linear configuration and parallel to each other and to vertical weld SV-5B. The longest indication is 6.15" long with two short offsets. The second indication is 5.54" long. Inspected upper 20" of SV-5B with NRI.
		UT	Inspected vertical welds SV-4A, SV-4B, SV-5A, SV-5B, SV-6A with relevant indications in SV-4B, SV-5A, SV-5B. Only nominal crack growth was recorded at SV-5A and SV-5B. A short indication was recorded at SV-4B.
	2018 (R23)	EVT-1	Inspected vertical welds SV-2B, SV-6A, SV-6B, and SV-8B, with relevant indications in SV-6A and SV-6B. No changes observed in SV-6A and SV-6B since R14.
		EVT-1	Inspected ring segment welds SV-3A, SV-3B, SV-3C, SV-3D, SV-3E, SV-3F, SV-7B, SV-7C, SV-7E. No relevant indications noted.
Shroud Support	1992 to present	UT or EVT-1	92 Outage: Inspected 0 and 180 deg access covers by UT. One planar indication detected at 180 deg, which is believed to be inherent to the fabrication process and is not ID connected.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			94/95 Outage: Inspected 40" of H9 weld and accessible areas of 10 gusset plates used for tie-rod repair. 96 Outage: Inspected access hole cover at 0 deg, and inspected 36" of H9 weld and gusset plate welds at 3 tie-rod locations. No relevant indications noted.
	1998 (R13)	EVT-1 VT-3	Baseline completed per BWRVIP-07 and BWRVIP-38 guidelines for all shroud repaired tie rods and load transfer gusset plate welds. *7 out of 10 tie rod assemblies inspected (by EVT-1/VT-3) in Fall 1998. No relevant indications noted. *All load transfer gusset plate welds and 12 inches of H9 weld each side of the gussets were examined by EVT-1. 7 out of 10 gussets inspected in R13. No relevant indications noted.
		EVT-1	Examined by EVT-1 the access hole cover at 180 degrees. No relevant indications noted.
	2000/2002	N/A	No inspections during R14 and R15
	2004 (R16)	EVT-1	Inspected two shroud support gusset plate welds and 12 inches of H9 top weld each side of the gussets. No relevant indications noted.
	2006 (R17)	EVT-1	Inspected all ten shroud repair tie-rod systems and corresponding shroud support gusset welds at same locations. No relevant indications were noted.
		EVT-1	Inspected top portion of horizontal weld H9 at each side of tie-rod locations and between gussets at 180°. No relevant indications were noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		VT-1	Inspected the access hole cover at 180°, with no relevant indications noted.
	2008 (R18)	N/A	No inspection performed in R18
	2010 (R19)	VT-3 EVT-1	Inspected (6) non-tie rod gussets locations plate welds and H9 weld on each side of the gusset at the same location. No relevant indications were noted.
		VT-1/3	Inspected the access hole cover at 0 and 180°, with no relevant indications noted
	2012 (R20)	EVT-1	Inspected 4 tie rod gusset locations (75, 135, 225, and 345 degrees) at the plate to RPV and support welds and also the H9 welds on both sides of the gusset. No relevant indications were noted.
		EVT-1/ VT-3	Inspected 3 shroud repair tie rods (15, 135, and 255 degrees). No relevant indications were noted.
		EVT-1	Inspected the 0 degree Access Hole Cover. No relevant indications were noted.
	2014 (R21)	EVT-1	Inspected 4 gussets (30, 150, 240, and 330 degrees) at locations without tie-rods. Inspected gusset to plate, gusset to RPV, and H9 on both sides at each location. No relevant indications noted.
		EVT-1	Inspected 180 degree Access Hole Cover and accessible areas of H9 weld. No relevant indications noted.
		EVT-1/	Inspected 3 shroud repair tie-rods (45,

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		VT-3	225, and 315 degrees). No relevant indications noted.
		EVT-1	Re-inspected hook to gusset interface at 135 degrees. Verified proper seating and no evident signs of hook movement/chattering. No indication noted.
	2017 (R22)	EVT-1	Inspected 6 gussets (15, 45, 165, 195, 255, and 315 degrees), gusset to plate, gusset to RPV, and H9 on both sides at each location, coinciding with tie-rod locations. No relevant indications noted.
		EVT-1/ VT-3	Inspected 4 shroud repair tie rods (75, 165, 195, and 345). Indications previously identified on the shroud ring segment in locations EDM'd for Tie Rod upper supports on 75°, 165°, 195°, and 345° locations. No significant change was noted from previous results; except, it was determined by vendor and owner LVIII examiners that previous recorded indication on the 75° Tie Rod bracket to shroud interface was not characteristic of an actual flaw and is non-relevant.
		EVT-1	Re-inspected 135° Tie-Rod lower hook interface with gusset plate. No recordable indications noted.
	2018 (R23)	EVT-1	Inspected 10 gussets (75, 90, 105, 120, 135, 210, 225, 285, 300, and 345), gusset to plate, gusset to RPV, and H9 on both sides at each location. No relevant indications noted.
		EVT-1	Inspected 0 degree Access Hole Cover and accessible areas of H9 weld. No relevant indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Core Spray Piping	1987 to present	VT-3, MVT-1 or EVT-1	IEB 80-13 of piping and welds in annulus. One clamp repair in 1988 at cracked weld in "B" loop at 190 deg below upper elbow piping. Welds were brushed and inspected by EVT-1 per BWRVIP-18 in Fall, 1996. No relevant indications found.
	1998 (R13)	EVT-1, MVT-1	Re-inspected 100% of loop "A" and "B" welds per BWRVIP-18 Guidelines (by EVT-1). No relevant indications noted, except for a rub-mark near CSA-10 weld. Support brackets were examined by MVT-1. No relevant indications noted.
	2000 (R14)	EVT-1	Re-inspected all Loop "A" and "B" creviced and T-box-to-pipe welds, including repair clamp welds per BWRVIP-18 Guidelines (by EVT-1). A relevant indication was noted on weld CSB-12. No other relevant indications were noted.
	2002 (R15)	EVT-1	Re-inspected all Loop "A" and "B" creviced and T-box-to-pipe welds; repair clamp at Loop "B" downcomer pipe; and rotating sample of pipe elbow upper/lower welds in Loop "A" at 10 degrees. No relevant indications noted.
		EVT-1	Re-inspected the indication noted in R14 on weld CSB-12. Level IIIs assessment is that the indication is now believed to be a scratch.
	2004 (R16)	EVT-1	Re-inspected all Loop "A" and "B" creviced and T-box-to-pipe welds; repair clamp welds at Loop "B" downcomer

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			pipe; and rotating sample of pipe elbow upper/lower welds in Loop "A" at 170 degrees. No relevant indications noted.
	2006 (R17)	EVT-1	Re-inspected all Loop "A" and "B" creviced and T-box-to-pipe welds; repair clamp welds at Loop "B" downcomer pipe , and rotating sample of pipe elbow upper/lower welds in Loop "B" at 190 degrees. Also, inspected all bracket support welds, including RPV side for Loop "A" and "B". No relevant indications noted.
	2008 (R18)	EVT-1	Re-inspected all Loop "A" and "B" creviced and T-box-to-pipe welds; repair clamp welds at Loop "B" downcomer pipe; and rotating sample of pipe elbow upper/lower welds in Loop "B" at 350 degrees. No relevant indications noted
	2010 (R19)	EVT-1	Re-inspected all Loop "A" and "B" creviced and T-box-to-pipe welds; repair clamp welds at Loop "B" downcomer pipe; and rotating sample of pipe elbow upper/lower welds in Loop "B" at 010 degrees. No relevant indications noted
	2012 (R20)	EVT-1	Re-inspected all Loop "A" and "B" creviced and T-box-to-pipe welds; repair clamp welds at Loop "B" downcomer pipe; and rotating sample of pipe elbow upper/lower welds in Loop "A" at 170 degrees. No relevant indications noted.
	2014 (R21)	EVT-1	Re-inspected all Loop "A" and "B" creviced welds, T-box-to-pipe welds, and repair clamp welds at Loop "B" downcomer. Inspected pipe elbow upper/lower welds on Loop "B", "C" downcomer at 190 degrees. No relevant

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			indications noted.
		EVT-1/ VT-3	Inspected all Core Spray Piping Bracket attachment welds to RPV and overall bracket condition. No relevant indications noted.
	2017 (R22)	EVT-1	Implemented the optimized scope. Re-inspected Loop "A" and "B" P1 hidden welds with limited access, Loop "B" 190 degree repair clamp welds and elbow welds on "D" downcomer at 350 degrees. No relevant indications noted.
	2018 (R23)	EVT-1	Inspected P1, P2, and P4 on "A" and "B" loops. No relevant indications noted.
		EVT-1	Inspected P3, P5, P6, P7, and P8 on "A", "B", "C", and "D" loops. No relevant indications noted.
		EVT-1	Inspected clamshell repair on loop "C" with no relevant indications noted.
Core Spray Sparger	1987 to present	VT-3, MVT-1 or EVT-1	IEB 80-13 of sparger and welds. MVT-1 and EVT-1 inspections per BWRVIP-18 in the Fall, 1996. An indication characterized as weld profile deficiency was recorded on spray nozzle D-28. Historical IVVI data was reviewed and the indication was previously noted and disposition as acceptable.
	1998 (R13)	EVT-1, MVT-1	Re-inspected 100% of sparger piping "A" and "B" welds per BWRVIP-18 Guidelines (EVT-1/MVT-1) including tee boxes, end caps, drain welds, and support brackets. No relevant indications noted.
	2000 (R14)	N/A	No inspections performed
	2002 (R15)	EVT-1	Re-inspected all T-box and end caps to

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			sparger pipe welds at Loops "A", "B", "C", and "D". No relevant indications noted.
		VT-1	Re-inspected Sparger "C" and "D" nozzle welds, and supporting brackets at "A" and "B". No relevant indications noted.
	2004 (R16)	VT-1	Re-inspected all sparger bracket support welds at "C" and "D". No relevant indications noted.
	2006 (R17)	EVT-1, and VT-1	Re-inspected by EVT-1 all T-box and end caps to pipe welds, and by VT-1 all bracket welds at spargers "A", "B", "C" & "D". Re-inspected by VT-1 all nozzle and drain to sparger welds at spargers "A" & "B". No relevant indications noted.
	2008 (R18)	N/A	No inspections performed in R18
	2010 (R19)	EVT-1	Re-inspected by EVT-1 on all S1,S2 and S4, T-box and end caps to pipe welds, and by VT-1 all (SB) bracket welds at spargers "A", "B", "C" & "D". Re-inspected by VT-1 all nozzle and drain to sparger welds at spargers "C" & "D". No relevant indications noted.
	2012 (R20)	N/A	No sparger inspections performed in R20.
	2014 (R21)	EVT-1/ VT-1	Inspected by EVT-1 all S1,S2 and S4, T-box and end caps to pipe welds, and by VT-1 all (SB) bracket welds at spargers "A", "B", "C" & "D". Re-inspected by VT-1 all nozzle and drain to sparger welds at spargers "A" & "B". No relevant indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	2017 (R22)	N/A	No sparger inspections performed in R22.
	2018 (R23)	EVT-1	Inspected Core Spray Sparger Nozzle sample location on Sparger "A" in the Cast Austenitic material. No relevant indications noted.
Top Guide (Rim, etc.)	1988, 92 and 94/95	VT-3, and EVT-1	2 cells inspected in 1988 and in 1992; 4 cells in 1994. Additional inspections included, alignment wedges, hold down bolts, and rim welds at several locations (EVT-1 at rim welds in 94/95). No relevant indications noted.
	1998 (R13)	N/A	No inspections performed
	2000 (R14)	VT-1, and VT-3	A total of 4 hold down assemblies were examined by VT-1 and 3 alignment pin assemblies by VT-3 per BWRVIP-26 Guidelines. No relevant indications were noted.
	2002 and 2004	N/A	No inspections in R15 and R16.
	2006 (R17)	VT-1 and VT-3	Inspected by VT-1 hold-down assemblies at 0 and 180 degrees (top only as below top guide is inaccessible). Inspected sampling of top guide surfaces by VT-1/VT-3. Also, inspected aligner pins at 0 and 180 degrees by VT-1. No relevant indications noted.
	2008 (R18)	VT-1	Inspected by VT-1 hold-down assemblies at 90 and 270 degrees (top only as below top guide is inaccessible). Also, inspected aligner pins at 90 and 270 degrees by VT-1. No relevant indications noted.
	2010 (R19)	EVT-1	Inspected by EVT-1 (8) grid beam cell locations, including plates and

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			intersection locations as specified per BWRVIP-183. No relevant indications.
	2012 (R20)	VT-1	Inspected 0 and 180 degree aligner assemblies from the top of the guide only. No relevant indications noted.
	2014 (R21)	N/A	No inspections performed.
	2017 (R22)	EVT-1	Inspected Top Guide Grid Beams at core locations 10-07, 10-39, 14-31, 18-19, 34-11, 34-19, 38-39, and 50-27. No relevant indications noted.
		VT-1	Inspected Top Guide Hold Down Assemblies at 90 and 270 degrees. No relevant indications noted.
	2018 (R23)	VT-1	Inspected Top Guide Hold Down Assemblies at 0 and 180 degrees. No relevant indications noted.
Core Plate (Rim, etc.)	1992 and 94	VT-3	Inspection at one core plate in 1992. Inspected approximately 25% of hold down bolting in 1994/95. No relevant indications noted.
	1998 (R13)	VT-3	Inspected 100% of hold down bolting. No relevant indications noted.
	2000 (R14)	VT-3	Inspected core plate plugs at 5 core locations. No relevant indications noted.
	2002 (R15)	N/A	No inspections performed
	2004 (R16)	VT-3	Inspected a total of 6 core plate plugs (at two locations). No relevant indications noted.
	2006 (R17)	VT-3	Inspected core plate plugs and the surrounding core plate surface at four LPRM locations. No relevant indications

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			noted.
	2008 (R18)	VT-1	Inspected 33 core plate hold down bolt assemblies from 0-180 degrees with no indications noted.
		VT-3	Inspected 10 core plate plugs @ cell location 12-37, 28-29 and 36-37 to meet 10% sampling requirements. No indication noted, all plugs inspected were properly seated, with no evidence of movement.
	2010 (R19)	VT-3	Inspected a total of 8 core plate plugs @ cell locations 28-21 and 28-37. No relevant indications noted.
	2012 (R20)	VT-1	Inspected a total of 10 hold down bolts with no relevant indications noted.
		VT-3	Inspected a total of 8 core plate plugs at locations 12-21, 20-21, and 36-13. No relevant indications noted.
	2014 (R21)	VT-3	Replaced all 77 core plate plugs. Performed as-left VT-3 with no relevant findings.
	2017 (R22)	VT-3	Inspected 50% (36) core plate rim hold-down bolting, 19% (15) core plate plugs and Core Plate location 38-39. No relevant indications noted except a maintenance issue with alignment pin, that was acceptably resolved.
	2018 (R23)	VT-3	Inspected a total of 36 hold down bolts with no relevant indications noted.
		VT-3	Inspected all 77 core plate plugs that were placed in 2014. Possible bypass

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			flow leakage was identified on locations 28-13E, 20-37E, and 12-37N. Plug location 28-13E was not fully seated and the mandrel was identified to be lower than during the R21 as-left inspection. Locations 20-37E and 12-37N exhibited signs of bypass flow. An evaluation was performed concluding the core plate plugs at all locations are acceptable for continued operation.
SLC	2000 (R13)	EVT-2	Performed Enhanced VT-2 on SLC nozzle-to-safe end weld during RPV System Leakage Test per BWRVIP-27 Guidelines. Test was "Accepted".
	2002/2004	EVT-2	Performed Enhanced VT-2 on SLC nozzle-to-safe end weld during RPV System Leakage Test per BWRVIP-27 Guidelines. Test was "Accepted".
	2006 (R17)	PT	Performed liquid penetrant examination on SLC nozzle-to-safe end weld per BWRVIP-27 Guidelines with no recordable indications noted.
	2008 (R18)	N/A	No Examination required based on 2006 inspection.
	2010 (R19)	PT	Performed liquid penetrant examination on SLC nozzle-to-safe end weld per BWRVIP-27 Guidelines with no recordable indications noted.
	2012 (R20)	UT	Performed UT exam of SLC nozzle. No relevant indications were found.
	2014 (R21)	N/A	No inspections performed.
	2017 (R22)	N/A	No inspections performed

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	2018 (R24)	N/A	No inspections performed.
Jet Pump Assembly	1987 to1994	VT-1,VT-3 and UT	Inspected all riser brace attachment welds by VT-1. No relevant indications but found debris at some weld locations. Have replaced all jet pump beams in 1992 because one exhibited indications of cracking by UT exam. Also inspected pump assembly, sensing lines, supports and diffuser to shelf welds, all by visual. No relevant indications but found debris at some weld locations. Cracking at a Japanese BWR of a Jet Pump riser weld prompted FitzPatrick to review IVVI tapes from previous refueling outages, including 1996 outage. Viewed accessible areas at two welds by VT-1, and at three welds by VT-3 examination. No cracking was found in the reviewed welds.
	1998 (R13)	MVT-1, and VT-3	Inspected by MVT-1 50% of all Jet Pumps (#7 to #16) for component safety priority H (high) and M (medium), per BWRVIP-41 Guidelines. No relevant indications noted. Interferences in the annulus region restricted inspection of AD-1 and AD-3b welds. Inspected by VT-3 sensing lines/brackets at same jet pumps (#7 to #16). No relevant indications noted.
	2000 (R14)	N/A	No inspections during R14
	2002 (R15)	EVT-1, VT-1, and VT-3	Completed inspection of Jet Pumps 5 and 6, and portions of Jet Pumps 19 and 20, with no relevant indications noted. Used inspections guidelines of BWRVIP-41 and 48. There are no MX-1 welds on the inlet-mixer, but there are IN-4 and MX-2 welds. Interferences in the annulus region

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			(gussets) prevented inspection of the AD-3b welds.
		VT-1	Inspected Jet Pump Beams at #5, 6, 19 and 20, at locations recommended by BWRVIP-41, and by latest Operating Experience. No relevant indications noted.
	2004 (R16)	EVT-1	Performed "High – priority" riser weld inspections at Jet Pumps #1, 2, 3, 4, 17 and 18. No relevant indications noted. Performed diffuser/adapter assembly weld inspections (Also "High"- priority) at Jet Pumps #17 and 18. No relevant indications noted.
		VT-1	Performed wedge bearing surface (WD-1) inspections at Jet Pumps #17 and 18. No relevant indications noted.
	2006 (R17)	UT	Inspected all twenty jet pump beams with no relevant indications recorded.
		UT	Inspected "High"- priority welds AD-1, AD-2, AD-3a, AD-3b, DF-2 and DF-3 at all 20 jet pumps (JP) with recordable indications at welds DF-2 (#JP 1 & 3) and AD-3b/DF-3 (#JP12 & 17). All indications were satisfactorily disposition.
		EVT-1	Inspected "High"- priority welds DF-2 at JP #1 &3 and DF-3 at JP #17 based on UT results. No recordable indication noted.
		EVT-1	Inspected riser welds RS-1, RS-2 and RS-3 at JP #19/20 & RS-3 at JP #03/04. Also inspected RS-6, RS-7, RS-8, RS-9

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			and RB welds at JP #01/02, 03/04, 17/18 & 19/20 with no recordable indications noted.
		EVT-1	Inspected weld DF-1 at JP #01/02, ¾, 17/18 & 19/20 with no recordable indications noted.
		VT-1	Inspected wedge bearing surfaces (WD-1) at JP #1, 2, 3, 4, 19 & 20 with no relevant indications noted.
	2008 (R18)	EVT-1	Inspected "Medium – priority welds IN-4 and MX-2 at JP # 1-4 & 17- 20 with no relevant indications noted.
		EVT-1	Inspected wedge bearing surfaces (WD-1) at JP # 7-12 & 20 with no relevant indications noted.
		VT-1/3	Inspected JP sensing line @ 1-4, 7-12 and 17-20, including bracket and attachment welds to diffuser with no relevant indications noted.
		EVT-1	Inspected the ID of JP 12 & 17 DF-3 welds to aid in evaluating previous indications identified by UT in RO17. No indications were noted visually from the ID and surface geometry appears normal with no undercut or root concavity noted.
	2010 (R19)	EVT-1	Inspected RS-6, RS-7, RB welds at JP-7 thru 16 with no recordable indications noted.
		EVT-1	Inspected RB-1and 2, RB leaf to pad and Pad to vessel welds @ JP-7 thru 16 with no relevant indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		EVT-1	Inspected "Medium – priority welds IN-4, MX-2 and DF-1 at JP # 7-16 with no relevant indications noted.
		EVT-1	Inspected RS-8 and 9 welds on all Jet Pump as required per VIP mandate. No relevant indications were noted.
		VT-1	Inspected WD-1 on Jet Pumps 1-6, 13-20 as required by VIP mandate with no relevant indications noted.
		EVT-1	Inspected RS1, 2, and 3 welds @ JP locations 7-16 with no relevant indications noted.
		UT	Re-Inspected "High"- priority welds AD-1, AD-2, AD-3a, AD-3b, DF-2 and DF-3 at all 20 jet pumps (JP) with Westinghouse JAMIS tool. Previous recordable indications at welds AD-3b/DF-3 (#JP12 & 17) were inspected and found to have no change in size from R17. Previous indications at DF-2 (#JP 1 & 3) were determined to be non-relevant. A new relevant indication was identified on JP # 8. All indications were satisfactorily disposition and bounded by previous evaluations.
	2012 (R20)	EVT-1	Inspected "Medium" priority DF-1, IN-4, and MX-2 welds of pumps # 1-4 and 17-20. No relevant indications found.
		EVT-1	Inspected RB-1 and 2 (leaf to pad and yoke) welds on pumps # 1-6 and 17-20 with no relevant indications noted.
		EVT-1	Inspected RS-6 and 7 welds on pumps # 1-4 and 17-20 with no relevant indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	2014 R21)	UT	Inspected BB-1, BB-2, and BB-3 regions on all 20 Jet Pump Beams. No relevant indications noted. All re-inspections are complete for this interval.
	2017 (R22)	EVT-1	Inspected RS-1, RS-2, RS-3, RS-6, RS-7, RS-8 and RS-9 welds on JP 5/6, 7/8 and 9/10. No relevant indications noted.
		EVT-1	Inspected DF-1 on JP 5, 6, 7, 8, 9, and 10 welds. No relevant indications noted.
		EVT-1	Inspected AD-1, AD-2, AD3a/b, DF-2 and DF-3 welds on JP 8, 9, 10, 12, and 17. No relevant indications noted.
		VT-3	Inspected Sensing Lines on JP 7, 8, 9, 10. No relevant indications noted.
		VT-1	Inspected JP Wedge bearing Surface, and Wedge Rods on all JP's. No relevant indications noted.
	2018 (R23)	EVT-1	Inspected RB-1 and RB-2 on JP 7/8, 9/10, and 11/12, IN-4 on JP 5, 6, 10, 11, 12, 13, and 14, and RS-1, RS-2, and RS-3 on 11/12, 13/14, and 15/16.
		EVT-1	Inspected JP 1 in the Cast Austenitic material on the transition piece, restrainer bracket, inlet mixer assembly, diffuser collar and guides, inlet nozzle, and inlet mixer elbow. No relevant indications noted.
		VT-1	Inspected JP Wedge bearing surface and wedge rods WD-1 on Loop "B" jet pumps. No relevant indications noted.
		UT	Inspected AD-1, AD-2, DF-3, AD-3a,

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			AD-3b and DF-2 on JP 1 through 20. Three previously reported relevant indications were recorded at DF-3 on JP 8, 12, and 17. All indications were satisfactorily disposition and bounded by previous evaluations.
		UT	Inspected DF-1 and MX-2 welds on JP 01, and 07 through 11. No relevant indications noted.
CRD Guide Tube	1992	VT-3	Inspected stub tube to vessel and stub tube to housing welds for 9 tubes. No relevant indications.
	1998 (R13)	N/A	No inspections performed.
	2000 (R14)	EVT-1 and, VT-3	Inspected accessible surfaces at 3 Guide Tubes per BWRVIP-47 Guidelines. Inspected accessible surfaces at 8 Guide Tubes (VT-3). No relevant indications noted.
	2002 (R15)	EVT-1 and VT-3	Inspected accessible surfaces at 4 Guide Tubes per BWRVIP-47 Guidelines. No relevant indications noted.
	2004 (R16)	N/A	No inspections performed.
	2006 (R17)	EVT-1 and VT-3	Inspected accessible surfaces at three Guide Tubes. No relevant indications noted.
	2008 (R18)	N/A	No Inspections performed
	2010 (R19)	EVT-1 and VT-3	Inspected CRGT-1, 2 and 3 accessible surfaces at 4 Guide Tubes per BWRVIP-47A Guidelines. No indications noted.
	2012 (R20)	N/A	No inspections performed in R20.
	2014 (R21)	N/A	No inspections performed.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	2017 (R22)	VT-3	Inspected Fuel Support Casting (FSC) (Cell location 38-39), alignment pin (ARPIN-10), accessible areas of the guide tube (including CRGT-1) and a general condition of the cell. No indications noted.
	2018 (R23)	VT-3	Inspected ARPIN-1 (Cell location 38-39 and 26-27) and CRGT-1 in cell location 26-27. No indications noted.
		EVT-1	Inspected CRGT-2, CRGT-3, and CRGT Base in cell location 26-27 with no indications noted.
CRD Stub Tube	1992	VT-3	See above.
	1998	N/A	No inspections during R13.
	2000/2002/ /2004/2006/ 2008/2010/ 2012/2014/ 2017/2018	N/A	No inspection requirements per BWRVIP-47 Guidelines.
In-Core Housing	1992	VT-1	No relevant indications.
	1998	N/A	No inspections during R13.
	2000 thru 2017	N/A	No inspection requirements per BWRVIP-47 Guidelines.
	2018 (R23)	VT-3	Inspected ICHGT/ICH-1, ICHS/ICGT-1, ICHS-1, and ICH/RPV-1 at cell locations 28-25 and 28-29.
Dry Tube	1994	VT-1	No indications. Replaced all dry tubes in 1987/88.
	1998 (R13)	N/A	No inspections performed.
	2000 (R14)	VT-1	Inspected 4 IRM/SRM In Core Dry Tubes per GE SIL-409 and GE RICSIL-

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			073 Guidelines. No relevant indications noted.
	2002 (R15)	VT-1	Re-inspected SRM Core Dry Tube 20-17 per GE SIL 409 and GE RICSIL-073 Guidelines. No relevant indications noted
	2004 (R16)	N/A	No inspections performed.
	2006 (R17)	VT-1	Inspected dry tubes at three locations with no relevant indications noted.
	2008 (R18)	VT-1	Inspected dry tubes at SRM locations 20-17, 28-41 and IRM location 20-25 per GE-SIL-409 Rev.2 with no relevant indications noted.
	2010 (R19)	VT-1	Inspected dry tubes at SRM locations 36-25 and IRM location 12-33, 28-33, 36-09 and 12-09 per GE-SIL-409 Rev.2 with no relevant indications noted
	2012 (R20)	VT-3	Inspected 4 dry tubes at IRM locations 12-41, 20-33, 28-25, and 36-41 per GE-SIL-409 Rev. 2. No relevant indications.
	2014 (R21)	VT-3	Replaced all 12 SRM/IRM dry tubes. Performed as-left VT-3 with no relevant findings.
	2017 (R22)	VT-3	Inspected 4 dry tubes at IRM locations 12-09, 36-09, 36-41 and SRM location 12-33. No recordable indications noted.
	2018 (R23)	VT-3	Inspected 4 dry tubes at IRM locations 20-25, 28-25, and SRM locations 28-41, 36-25. No relevant indications noted.
Instrument Penetrations	1992	VT-1	Two inspected in 1992. No relevant indications noted.
	1998 (R13)	N/A	No inspections performed.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	2000 (R14)	VT-2	Performed VT-2 ISI System Leakage Exam Test at 6 instrument nozzles (during RPV System Test) per BWRVIP-49 Guidelines. Test was conducted to the extent possible with insulation installed and shield doors closed. Test was "Accepted".
	2002/2004/ 2006/ 2008 / (R15-R18)	VT-2	Performed a VT-2 leakage test at 6 instrument nozzles (same as in R14-Fall 2000). Test was "Accepted" with no leakage noted.
	2010 (R19)	PT	Inspected 2 instrument nozzles. Inspection was "Accepted" with no leakage noted.
	2012 (R20)	PT	Inspected 2 instrument nozzles. Inspection was "Accepted" with no leakage noted.
	2014 (R21)	PT	Inspected 2 instrument nozzles. Inspection was "Accepted" with no leakage noted.
	2017 (R22)	VT-2	Performed a VT-2 leakage test at 6 instrument nozzles. Test was accepted with no leakage noted.
	2018 (R23)	VT-2	Performed a VT-2 leakage test at 6 instrument nozzles with insulation installed and bioshield doors closed. Test was accepted with no leakage noted.
Vessel ID Brackets	1987 to present	VT-1, VT-3, EVT-1 for core spray	Section XI inspections of jet pump riser brace, dryer, feedwater sparger, core spray, and surveillance capsule holder brackets, performed once per interval. Last inspection was Fall, 96 VT-3, or VT-1 if in beltline region. EVT-1 for core spray. No relevant indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
	1998 (R13)	MVT-1	Inspected Core Spray Brackets and Jet Pump Riser Brace Attachments per BWRVIP-48 requirements. No relevant indications noted.
	2000 (R14)	N/A	No inspections in R14
	2002 (R15)	EVT-1	Inspected Jet Pump Riser Brace (at JP #5/6 and #19/20); and Feedwater Sparger Bracket Attachments (at all 8-locations), per BWRVIP-48 requirements. No relevant indications noted.
	2004 (R16)	EVT-1	Inspected shroud support gusset plate welds to RPV wall at two locations, with no relevant indications.
		EVT-1, VT-3	Inspected all four steam dryer support brackets and attachment welds to RPV wall, with no relevant indications.
		VT-3	Inspected all four steam dryer hold-down brackets and attachment welds to RPV top head, with no relevant indications noted.
		EVT-1	Inspected guide rod and bracket to RPV weld at 180°, with no relevant indications noted.
	2006 (R17)	EVT-1	Inspected all core spray piping support bracket welds to RPV wall, with no recordable indications noted.
		EVT-1	Inspected shroud support gusset plate welds to RPV wall at ten locations, with no relevant indications noted.
		EVT-1	Inspected riser brace leaf welds to RPV wall at JP #01/02, 03/04, 17/18 & 19/20, with no recordable indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		VT-1	Inspected surveillance sample holder brackets upper and lower) at 030° and 120° to RPV wall, with no relevant indications noted.
		VT-3	Inspected guide rod and bracket to RPV weld at 000°, with no recordable indications noted.
	2008 (R18)	N/A	No inspections performed
	2010 (R19)	EVT-1	Inspected shroud support gusset plate welds to RPV wall at six locations, with no relevant indications noted
		EVT-1	Inspected riser brace leaf welds to RPV wall at JP #7-16, with no recordable indications noted
		EVT-1	Inspected all feedwater support brackets and attachment welds to RPV wall, with no relevant indications
	2012 (R20)	EVT-1	Inspected shroud support gusset plate welds to RPV wall at 4 locations, no relevant indications noted.
		EVT-1	Inspected riser brace leaf welds to RPV wall at Jet Pumps # 1-6 and 17-20
	2014 (R21)	EVT-1	Inspected 4 shroud support gusset plate welds to RPV and H9 on both sides at 4 locations. No relevant indications noted.
		EVT-1/ VT-3	Inspected core spray piping bracket to RPV welds and overall bracket condition. No relevant indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		VT-1/VT-3	Inspected upper and lower surveillance specimen holder brackets at 300 degrees. No relevant indications noted.
		VT-3	Inspected 180 degree guide rod and RPV bracket attachment. No relevant indications noted.
		EVT-1	Inspected all Steam Dryer Support Brackets. No relevant indications noted.
		VT-3	Inspected all Steam Dryer Hold Down Brackets. No relevant indications noted.
	2017 (R22)	EVT-1	Inspected shroud support gusset plate welds (H9) to RPV wall at 6 locations. No relevant indications noted.
		VT-1/VT-3	Inspected upper and lower Surveillance Sample Holder Brackets at 30° and 120°. No recordable indications noted.
		VT-3	Inspected upper Guide Rod Bracket Attachment at 0°.
	2018 (R23)	EVT-1	Inspected all feedwater sparger end bracket vessel attachment welds. No relevant indications noted. Inspected riser brace leaf welds to RPV wall at Jet Pumps # 7-12.
LPCI Coupling	N/A	N/A	Not applicable to this plant.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Fuel Support Castings	1998 (R13)	VT-3	Inspected accessible areas at fuel support castings during in-process control rod blade change-out. No relevant indications noted.
	2000 (R14)	VT-3	Inspected accessible areas at fuel support castings during in-process control rod blade change-out. No relevant indications noted.
	2002 (R15)	VT-3	Inspected accessible areas at four fuel support castings during in-process control rod blade change-out. No relevant indications noted.
	2004 (R16)	VT-3	No inspections performed
	2006 (R17)	VT-3	Inspected accessible areas at fuel support castings at four locations. No relevant indications noted.
	2008 (R18)	N/A	No Inspections performed
	2010 (R19)	N/A	No Inspections performed
	2012 (R20)	N/A	No inspections performed.
	2014 (R21)	N/A	No inspections performed.
	2017 (R22)	VT-3	Inspected accessible areas at fuel support casting (FSC) Cell 38-39 in support of condition evaluation and maintenance activities.
	2018 (R23)	EVT-1	Inspected accessible areas of fuel support casting (FSC) 26-27. No relevant indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
CRD Nozzle NIR	1998 (R13)	VT-1	The Control Rod Drive Nozzle Inner Radius was examined. No relevant indications noted.
	2000 (R14)	EVT-1	Examined the CRD Nozzle Inner Radius, including adjacent vessel wall area. No relevant indications noted.
	2002-2008	N/A	No inspections in R15 – R18.
	2010 (R19)	EVT-1	Examined the CRD Nozzle Inner Radius, including adjacent vessel wall area. No relevant indications noted.
	2012 (R20)	N/A	No inspection performed.
	2014 (R21)	N/A	No inspections performed.
	2017 (R22)	N/A	No inspections performed.
	2018 (R23)	EVT-1	Examined the CRD Return Nozzle Inner Radius and adjacent wall. No relevant indications noted.
Steam Dryer Moisture Separator	1998 (R13)	VT-3	Inspected 25% of shroud head bolts at storage pit. No relevant indications noted.
	2000 (R14)	VT-3 and EVT-1	Re-inspected by VT-3 all areas of the steam dryer support ring and by EVT-1 previously found cracks (1992/1994). A total of 10 indications were noted in 2000 (R14), with no discernable changes from previous inspection.
	2002 (R15)	N/A	No inspections performed.
	2004 (R16)	VT-1 and VT-3	Inspected steam dryer integrity per SIL 644 Supplement 1 (steam dryer integrity) and INPO OE 18796 (steam dryer hood crack and tie bar recordable visual indications) guidelines. Two relevant indications areas were noted. These indications resulted in expanded scope with additional brushing and evaluations. These indications are in the HAZ of vibration block welds and at a drain channel. All indications were satisfactorily dispositioned by

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			calculations. Plans to re-inspect in R17.
		EVT-1/ VT-3	Inspected steam dryer hold-downs and support brackets and attachment welds with no relevant indications noted.
		VT-3	Inspected steam separator lifting rod eye assemblies and 25% of shroud head bolts with no relevant indications noted.
	2006 (R17)	VT-1	Inspected selected welds on steam dryer (per requirements of BWRVIP-139 over those recommended by SIL 644). A relevant indication was noted at the intersection of H-2 and V-7 welds (SW quadrant) and the weld was ground out and repaired in R17.
		VT-1	Inspected previous relevant indications noted in R16 (i.e., at eight vibration block welds and at the weld adjacent to drain channel #8) with no observed change noted since R16. The linear indication at one vibration block was re-configured from previous R16 reporting.
	2008 (R18)	VT-1	Inspected previous relevant indications (i.e., eight vibration blocks and weld adjacent to drain channel #8) with no change to indication size noted.
		VT-1	Inspected R17 weld repair @ weld H2 & V7 intersection in SW quadrant with no relevant indication noted.
		VT-1	Inspected upper support ring including previous indication noted in R14. 9 of the 10 previous indications have been determined to be scratches and are considered non-relevant. No other indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		VT-3	Inspected shroud head bolts #10 through 19 based on OE31414 with no relevant indications noted.
		VT-1	Inspected 25% of upper and middle support ring gussets on moisture separator based on OE25795. A linear indication was noted on the #5 upper gusset. Scope was expanded to include all upper and mid support ring gussets and linear indications were also identified on upper and mid gusset #6. The indications were evaluated and found acceptable. Additionally during the gusset examinations a broken tie strap was noted on the separator at 0 degrees. The broken strap was removed per EC10523 and evaluated for acceptance. Note: OE27679 was issued to inform industry of the condition.
	2010 (R19)	VT-1	Inspected previous relevant indications (i.e., at eight vibration block welds and at weld adjacent to drain channel #8) with no change noted.
		VT-1	Inspected R17 weld repair @ weld H2 and V7 intersection in SW quadrant with no relevant indications noted.
		VT-1	Re-examined previously identified upper and mid support gussets @ locations 5 and 6 with no change noted.
		VT-1	Re-examined previously identified broken tie strap remnant @ 0 degrees with no change noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		VT-3	Inspected shroud head bolts #29 through 36 based on OE31414 with no relevant indications noted.
	2012 (R20)	VT-1	Inspected previous relevant indications (i.e., eight vibration block welds and weld adjacent to drain channel #8) with no change noted.
		VT-1	Inspected R17 weld repair @ weld H2 and V7 intersection in SW quadrant with no relevant indications noted.
		VT-1	Re-examined previously identified upper and mid support gussets @locations 5 and 6 with no change noted.
		VT-1	Re-examined previously identified broken tie strap remnant @ 0 degrees with no change noted.
	2014 (R21)	VT-1	Inspected previous relevant indications on eight vibration block welds and weld adjacent to drain channel #8 with no changed noted.
		VT-1	Inspected R17 weld repair @ weld H2 and V7 intersection in SW quadrant with no relevant indications noted.
		VT-1/VT-3	Completed dryer external overview per BWRVIP-139 and SIL 644 Rev.2 guidance. Inspected all outer hood bank, outer end bank plate, cover plate, manway cover, ring segment, and tie-bar welds. Inspected all inner hood bank plate welds, drain channel welds, and lifting rod assemblies (including jacking bolts, earthquake blocks, and seal plates) in the SW and NE quadrants. Performed dryer VT-3 overview. No relevant

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			indications identified.
		VT-1	Re-examined previously identified upper and mid support gussets @locations 5 and 6 with no change noted.
		VT-1	Re-examined previously identified broken tie strap remnant @ 0 degrees with no change noted.
		VT-1	During examination of previous indication at mid support gusset #5, a new indication was identified in the vicinity of the existing one. The new indication is approximately 0.5'' and is in the upper HAZ of the gusset-to-support-ring weld. Review of previous inspections lead to the belief that this indication has existed since at least 2010 but was not called as it was not easily discernable from the amount of crud covering it. There appears to be no change. This newer indication is bounded by the evaluation performed in 2008 for the indications identified then.
	2017 (R22)	VT-1	Re-inspected indications on Upper Support Ring Gussets #5 and #6 and Middle Support Ring Gusset #6. No significant change in these indications.
		VT-3	Re-inspected the cut Tie Bar Strap at 0°, with no significant change in the condition.
	2018 (R23)	VT-1	Re-inspected indications on the Upper Support Ring Gussets #5 and #6 and Middle Support Ring Gusset #6. No significant change in these indications.
		VT-1	Inspected the steam dryer lifting

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			assemblies at 35 and 215 degrees. No relevant indications noted.
		VT-1	Inspected Steam Dryer Upper Support Ring from 140-220 degrees. No relevant indications noted.
		VT-1	Re-inspected steam dryer vibration block in bank 3 with no discernible change in the condition.
		VT-1	Inspected the steam dryer weld repair at H-2 and V-7. No relevant indications noted.
		VT-1	Re-inspected the steam dryer drain channel #8 with no changes in the previously identified indications.
		VT-3	Re-inspected the cut Tie Bar Strap at 0°, with no discernible change in the condition.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Surveillance Capsule Specimen Holder	2000 (R14)	VT-1/VT-3	Inspected upper and lower mounting bracket at the 300 degree location. Also inspected condition of the holder (VT-3). No relevant indications noted.
	2006 (R17)	VT-1/VT-3	Inspected upper and lower mounting bracket welds at 30 and 120 degrees. No relevant indications noted.
	2008 (R18)/ 2010 (R19)/ 2012 (R20)	N/A	No inspections performed.
	2014 (R21)	VT-1/VT-3	Inspected upper and lower mounting brackets at 300 degree location and attachment welds. Also inspected condition of the holder (VT-3). No relevant indications noted.
	2017 (R22)	VT-1/VT-3	Inspected upper and lower mounting brackets at 30° and 120° location and attachment welds. Also, inspected condition of the holder (VT-3). No relevant indications noted.
	2018 (R23)	VT-1	Inspected upper and lower surveillance specimen holders at 30 and 300 degrees. Cracking was identified on the 30 degree surveillance specimen holder on the second stitch weld from the top on the 90 degree side of the basket to tube weld. An evaluation was performed and determined the observed indication will not impact the overall structural integrity of the holder and the component remains acceptable for continued operation.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
Lower Plenum	2000 (R14)	VT-1/VT-3	Inspected by VT-3 the accessible areas of lower plenum per BWRVIP-47 guidelines. No relevant indications noted. Inspected by VT-1 the accessible areas of the bottom head drain. After removal of debris, the area was re-examined and found acceptable.
	2002-2017	N/A	No inspections performed due to lack of access.
	2018 (R23)	VT-3	Inspected core plate underside in cell location 26-27 and accessible lower plenum components. No relevant indications noted.
Feedwater Sparger	2002 (R15)	VT-3	Inspected Sparger pipe assemblies at 45, 135, 225, and 315 degrees including sparger welds and end brackets. No relevant indications noted.
		VT-1	Inspected junction t-box welds and nozzle inner radius (NIR) at 45, 135, 225, and 315 degrees. No relevant indications noted.
		UT	Inspected the NIR at all 4 locations. No relevant indications noted.
	2004 & 2006	N/A	No inspections performed.
	2008 (R18)	VT-1/3	Inspected sparger brackets at 45, 135, 225, and 315 degrees based on OE24382 for wear identified. Brackets at 45 and 135 degrees were noted to have bracket wear around the pin. The condition was evaluated and found acceptable.
	2010 (R19)	VT-3	Inspected sparger pipe assemblies at 45, 135, 225, and 315 degrees including sparger welds and end brackets. No relevant indications noted.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
		VT-1/ EVT-1	Inspected junction t-box welds and NIR at 45, 135, 225, and 315 degrees. No relevant indications noted.
		VT-1	Re-examined sparger brackets at 45 and 135 degrees for wear noted in R18. No change was identified.
	2012 (R20)	VT-1	Re-examined sparger brackets at 45 and 135 degrees for wear noted in R18. No change was identified.
	2014 (R21)	VT-1	Re-examined sparger brackets at 45 and 135 degrees for wear noted in R18. No change was identified.
	2017 (R22)	VT-1	Re-examined sparger brackets at 85°, 95°, and 175°, with no significant changes in indication conditions.
	2018 (R23)	VT-3/VT-1	Inspected sparger assemblies and flow nozzles at 45, 135, 225, and 315 degrees including sparger welds and end brackets. No changed noted in previous indications found on flow nozzles from 280 to 350 degrees. Conditions found previously on the 85, 95, 175 and 265 degree brackets had no change from the previous inspections. Newly identified wear was identified on the 275 and 355 degree brackets. The wear found on the 275 and 375 degree brackets is much less than the other locations noted and the conditions are acceptable as-is.
		VT-1	Inspected feedwater sparger tee, end cap welds, and nozzle inner radius at 45, 135, 225, and 315 degrees.
Dissimilar Metal Welds	2004 (R16)	UT	Performed UT on DM welds 24-10-131 and 24-10-132 and nozzle N-9-C1

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			overlay with no relevant indications noted.
	2006 (R17)	UT	Performed UT of nozzle to safe end on the following welds with no relevant indications noted: N-1B-SE N-2H-SE N-2K-SE
	2008 (R18)	UT	Performed UT of nozzle to safe end on the following welds with no relevant indications noted: N-1A-SE N-2A-SE N-2B-SE N-2D-SE N-2E-SE N-2F-SE N-2G-SE N-2J-SE N-5A-SE N-8A-SE N-8B-SE
		UT	Performed UT on nozzle to safe end N-2C-SE and an identified one axial location approximately ½'' depth and ¾'' wide. The indication was located on the butter to butter and was ID connected. Assume the flaw to be IGSCC. The weld was overlay and found acceptable.
	2010 (R19)	UT	Performed UT on CRD return cut and cap overlay with no relevant indications noted.
		UT	Re-examined N-2C-SE overlay from R18

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			with no relevant indications noted.
		UT	Performed UT on DM welds 24-10-130, 24-10-131, 24-10-132, 24-10-142, 24-10-143, and 24-10-144 with no relevant indications noted.
	2012 (R20)	UT	Performed UT on N1B Recirc Outlet nozzle to safe end weld, and N2H and N2K recirc inlet nozzle to safe end welds with no relevant indications noted.
	2014 (R21)	UT	Performed UT on N-5A Core Spray and N-8A, 8B Jet Pump Instrumentation nozzle to safe end welds with no relevant indications noted.
	2017 (R22)	UT	Performed UT on DM welds 28-02-2-53, 12-02-2-65 with no relevant indications. Performed UT on DM welds 24-10-131, 24-10-132, 24-10-142, 24-10-143, and 24-10-144 with no relevant indications. Performed UT on DM weld 24-10-130. An axial indication was identified. It was located within the weld and butter. The postulated length was 0.95", which encompasses the full width of the butt-weld and 0.20" of the stainless steel heat-affected zone (HAZ). The flaw is assumed to be caused by IGSCC. The weld was overlaid. Performed UT of nozzle to safe end on the following nozzles with no relevant indications: N2B N2D N2D N2E

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Re-inspections
			N2F N2G N2J Note: These welds were examined as a result of the expanded scope for the indication found on weld 24-10-130.
	2018 (R23)	UT	Performed UT on nozzle to safe end welds on nozzle N1A and N2A with no relevant indications.
FOSAR	2008 – 2012	VT-3	Scheduled 12 hour windows for cleaning and FOSAR in annulus
	2014 (R21)	VT-3	No scheduled FOSAR windows. FOSAR completed at areas in the annulus where inspections were being performed.
	2017 (R22)	VT-3	Completed a 360° FOSAR examination in areas of annulus.
	2018 (R23)	VT-3	Completed a 360° FOSAR examination in the areas of annulus. Completed FOSAR in the Bottom Head General Area and Drain Line.

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Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	1994	UT & VT	Comprehensive UT Baseline of some Category "C" circumferential welds (H-2, H-3, H-4, and H-5) per BWRVIP-01, Rev. 0. Partial UT baseline of welds H-1, H-6, and H-7, w/ partial Enhanced VT-1 of H-6 OD. Exams per BWRVIP Core Shroud NDE Uncertainty and Procedure Standard, dated November 21, 1994. Indications identified on ID of H-1, H-3, H-4, and H-6, and OD of H-4 and H-5. Full structural margins calculated using two cycles of crack growth for comprehensively examined welds, one cycle for welds with limited exams. No indications identified on H-2 and H-7.
	1996	UT	Comprehensive UT of welds H-1, H-6 and H-7 per BWRVIP-01, Rev. 1. Exams per BWRVIP-03. Indications identified on ID of welds H-1, H-6 and H-7, on OD of weld H-1. Full structural margins calculated using two cycles of crack growth. Reexaminations planned per BWRVIP-76
	2002	UT	Comprehensive UT of welds H-1 through H-7 per BWRVIP-76. Indications identified on each weld. UT of Vertical welds V-1 through V-4. No indications identified. Reexaminations planned per BWRVIP-76

Reactor Internals Inspection History

Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud (Cont.)	2012	UT & VT	Comprehensive UT of welds H-1 through H-7 per BWRVIP-76, Rev. 1. Indications were identified on all horizontal welds. Horizontal welds H1, H2, H3 and H4 were evaluated and found acceptable for continued service via a plant specific analysis performed by SIA. Horizontal welds H5, H6 and H7 were evaluated via Table 2-1 of BWRVIP-76. UT of vertical welds V-1 through V-8 were performed with one indication identified on the V-3 weld. The indication was determined to be acceptable for continued service. EVT-1 examinations were performed on the following: shroud ID of the H-4 weld at 045 degrees, the shroud ID intersection of the V-5 and H-4 welds at 090 degrees, shroud ID intersection of the V-6 and H-4 welds at 270 degrees. No indications were identified during the visual inspection of the core shroud.

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Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2018	EVT-1	Off-axis exams performed from the OD of the shroud on one horizontal weld (H4) in two locations (337-023 deg. [~81.2in.] and 157-203 deg. [~81.2in.]) and the entire length (97 in.) of one vertical weld (V4). Horizontal weld peak fluence of inspected areas was approx. 5.74E+20 n/cm^2 and lowest fluence of inspected areas was approx. 1.09E+20 n/cm^2. Vertical weld peak fluence of inspected areas was approx.1.39E+20 n/cm^2 and lowest fluence of inspected areas was approx. 5.93E+19 n/cm^2. Accumulated EFPY is estimated to be 33.7 EFPY at time of inspection. Thirteen (13) indications were identified on the H4 weld. The longest flaw found was 3" in length. All flaws were evaluated as acceptable per the generic acceptance criteria of BWRVIP Letter 2016-030. No off-axis indications were identified on the V4 weld.
Shroud Support	1992	VT-3	VT-3 examination of support leg stub welds. No indications identified. VT-3 examination of welds H-7, H-8, and shroud support cylinder. No indications identified.
	1994	VT-3	VT-3 of accessible portions of H-8 weld between Jet Pump #1 and #10. No indications identified.
		VT-1	VT-1 examination around perimeter of 0 deg. access hole cover. No indications identified.
		UT	UT examination of both access hole covers. No indications identified.

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Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	1998	EVT-1	EVT-1 examination of both AHCs. No indications identified. EVT-1 of 10% of shroud support weld H-8, top side, no indications identified. EVT-1 of 10% of shroud support weld H-9, top side, no indications identified.
	2000	EVT-1	EVT-1 examination of both AHCs. No indications identified.
		VT-3	VT-3 of accessible portions of H-9 weld between 0° and 180° Azimuth. No indications identified.
	2002	UT	UT of 10% of H-9 weld length from OD of vessel. No indications identified.
	2004	EVT-1	EVT-1 of > 10% of shroud support weld H-8, top side, between jet pumps 10 – 11 and 1 – 20. No indications identified.
		VT-3	VT-3 of accessible portions of H-9 weld between 180° and 360°. No indications identified
	2008	EVT-1	EVT-1 examination of both AHCs. No indications identified.
	2010	EVT-1	EVT-1 was performed on both AHCs, no indications identified. EVT-1 of > 10% of shroud support weld H-8, top side, between jet pumps 10 – 11 and 1 – 20. No indications identified.
Shroud Support (Cont.)	2010 (Cont.)	UT	BWRVIP-180 baseline UT exams were completed on both AHCs. No indications identified.
	2012	EVT-1	EVT-1 of the H-9 weld was performed on the 157.5°-202.5° and the 337.5°-022.5° degree segments of the weld. No indications were identified. Note: Examination coverage of the H-9 weld was greater than 10% of the weld.

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Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2016	EVT-1	EVT-1 was performed on both AHCs, no indications identified. EVT-1 of 10% of shroud support weld H-8, the 157.5 -202.5 deg and 337.5-022.5 deg segments of the weld. No indications identified.
	2018	EVT-1	EVT-1 examination of both AHCs. No indications identified. EVT-1 of the H9 weld was performed between 157.5°-202.5° and between 337.5°-022.5°. No indications were identified.
Core Spray Piping	1980 to 1996	VT-1 (1 mil)	Enhanced VT-1 (1 mil resolution) performed on piping and welds each refueling outage per IEB 80-13, no indications identified.
	1996	VT-1 (1/2 mil)	EVT-1 (1/2 mil resolution) performed on annulus piping welds per BWRVIP-18. Cracking identified in "B" Header tee-box cover plate weld (P2B). UT performed to characterize indication. Evaluation demonstrated structural margin for one operating cycle
	1998	EVT-1 & UT	Reinspection per BWRVIP-18, using UT technique. EVT-1 used to supplement UT. No new indications identified. P2B weld reexamination yielded additional margin.
	2000	EVT-1	EVT-1 of nine (9) piping welds not previously UT'd, and of six (6) pipe brackets and attachment welds. No indications identified.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2002	EVT-1 & UT	Reinspection per BWRVIP-18, using UT technique (28 welds). EVT-1 used to supplement UT (6 welds). EVT-1 on two (2) support brackets. No new indications identified. P2B weld indication reexamination revealed minimal growth.
Core Spray Piping (Cont.)	2004	EVT-1	EVT-1 of twelve (12) piping welds not accessible for UT inspection. No indications identified
	2006	EVT-1 & UT	Reinspection per BWRVIP-18, using UT technique (24 welds). EVT-1 used to supplement all one-sided UT (12 welds). EVT-1 only on eight (8) pipe welds and six (6) support brackets. P2B weld indication reexamination revealed no growth. New 9/16" indication identified visually at intersection of P3B1 and P2B welds. Structural and leakage evaluations found flaw acceptable for continued service.
	2008	EVT-1	Re-inspection per BWRVIP-18, EVT-1 used on (21) pipe welds. P2B weld indication re-examination revealed no growth. The P3B1 9/16" indication revealed no growth. New indication (0.49") identified visually on the upper side of P3B1 and P2B welds. Structural and leakage evaluations found flaw acceptable for continued service.

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Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2010	EVT-1 & UT	Reinspection per BWRVIP-18, using UT technique (24 welds). Two sided UT performed on selected P4 elbow welds. EVT-1 used to supplement all one-sided UT on T-box welds (8 welds). P2B weld indication reexamination revealed no growth. P3B1 indications identified some change in measured size due to better cleaning and exam video resolution. . Structural and leakage evaluations found flaw acceptable for continued service.
Core Spray Piping (Cont.)	2012	EVT-1	EVT-1 examination of 17 pipe welds. The examinations re-identified indications on the P2B and P3B1 weld, however, no growth from last outage. Structural and leakage evaluations found flaw acceptable for continued service. All other examinations identified no indications.
	2014	EVT-1	EVT-1 examination of 33 pipe welds. The examinations re-identified indications on the P2B and P3B1 weld, however, no growth from last outage. Structural and leakage evaluations found flaw acceptable for continued service. All other examinations identified no indications.
	2016	EVT-1	EVT-1 examination of (7) pipe welds. The examinations re-identified indications on the P3B1 weld, however, no growth from last outage. Structural and leakage evaluations found flaw acceptable for one cycle. All other examinations identified no indications.
	2018	EVT-1	EVT-1 examination of 30 pipe welds. Previously identified flaws on the P2B and P3B1 welds were re-examined with no changes identified from last outage. No indications were identified in any of the other examinations.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger	1980 to 1994	VT-1 (1 mil)	Enhanced VT-1 (1 mil resolution) performed on piping and welds each refueling outage per IEB 80-13, Cracking discovered at tee-box to sparger pipe weld ("B" Sparger, 1982), bolted repair clamp installed. No other indications identified.
	1998	VT-3 & MVT-1	Reinspections per BWRVIP-18, no indications identified.
	2000	EVT-1	EVT-1 of selected sparger welds per BWRVIP-18. No indications identified.
Core Spray Sparger (Cont.)	2000 (Cont.)	VT-1	VT-1 of sparger tee-box repair clamp, and approx. 50% of sparger "C" and "D" nozzles and drains. VT-1 of eleven (11) sparger brackets and welds. No indications identified.
	2002	VT-1, EVT-1	VT-1 of six (6) sparger support brackets, one (1) tee box repair clamp, and 50% of sparger "A" and "B" nozzles and drains. EVT-1 of seven (7) sparger pipe welds. No indications identified.
	2004	VT-1, EVT-1	VT-1 of six (6) Sparger support bracket welds, one (1) sparger drain, and 50% of nozzles on spargers "C" and "D". EVT-1 of fifteen (15) Sparger pipe welds. No indications identified.
	2006	VT-1, EVT-1	VT-1 of six (6) sparger support brackets, one (1) tee box repair clamp, and 50% of sparger "A" and "B" nozzles and drains. EVT-1 of eight (8) sparger pipe welds. No indications identified.
	2008	EVT-1, VT-1	VT-1 of six (6) sparger support brackets and 50% of sparger "C" and "D" nozzles and drains. EVT-1 of ten (10) sparger pipe welds. No indications identified.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2010	VT-1, EVT-1	VT-1 of six (6) sparger support brackets, one (1) tee box repair clamp, and 50% of sparger "A" and "B" nozzles and drains. EVT-1 of eight (8) sparger pipe welds. No indications identified.
	2012	VT-1, EVT-1	VT-1 of six (6) sparger support brackets and 50% of sparger "C" and "D" nozzles and drains. One recordable indication was identified on sparger bracket 04. The indication was defined as deformation on the top, middle and lower brackets. The deformation was concluded to be minor and would not impact the ability of the bracket to support the sparger piping. EVT-1 of six (6) sparger pipe welds identified no indications.
Core Spray Sparger (Cont.)	2014	VT-1, EVT-1	VT-1 of six (6) sparger support brackets, one (1) tee box repair clamp and 50% of sparger "A" and "B" nozzles and drains. EVT-1 of eight (8) sparger pipe welds. No indications identified.
	2018	VT-3, VT-1	VT-3 of (2) drain plugs ("B" and "D"), and VT-1 of (1) tee box repair clamp. No indications identified.
Top Guide (Rim, etc.)	1976 to 1994	VT-3	VT-3 exam every other refueling outage per Section XI. No indications identified.
	1987	UT	UT examination performed of specific cells. No indications identified.
	1994	VT-3	Visual (VT-3) examination of 4 cells (48-41, 08-25, 24-17, and 24-25), per SIL 554. No indications identified.
	1996	VT-3	Visual (VT-3) of 2 aligner pins (0 deg. And 270 deg.), per SIL 588. No indications identified.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2012	EVT-1	EVT-1 examinations were performed on nineteen (19) top guide cells in accordance with BWRVIP-183. No indications were identified.
Core Plate (Rim, etc.)	1996	VT-3	VT-3 examination of all accessible hold down bolts (cell 16-57, and area at 0 and 270 deg. Azimuth. No indications identified.
	2010	VT-3	VT-3 examination of 16 core plate plugs. No Indications identified.
	2012	VT-3	All 129 core plate plugs were replaced with the new design. VT-3 of nine (9) core plate bolts was performed. No indications were identified.
SLC	1992	PT	Surface (PT) examination of nozzle to safe end weld per Section XI. No indications identified.
	1998	PT & UT	PT and UT of N10 nozzle to safe-end, no indications identified.
SLC (Cont.)	2002	PT	Extended dwell time Liquid Penetrant examination of entire safe end. No indications identified.
	2006	PT	Extended dwell time Liquid Penetrant examination of entire safe end. No indications identified
	2010	UT-E	SLC Nozzle to safe end weld. No indications identified.
Jet Pump Assembly	1976–1996	VT-3	Visual VT-3 of all jet pump components performed every other refueling outage.
	1981	VT & UT	VT and UT examination performed on all 20 hold down beams. No indications identified.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	1994	VT	Restrainer bracket wedge misalignment and wear identified on several wedges. Evaluations found condition acceptable without repair. One restrainer bracket set screw tack weld found cracked. Evaluations found condition acceptable without repair.
	1996	VT	Restrainer bracket wedge conditions and set screw tack welds remain unchanged, condition acceptable without repair.
	1998	MVT-1	MVT-1 of: RS-1 weld on all 10 risers, RS-2 & RS-3 welds on 6 of 10 risers. No indications identified.
		UT	UT of all 20 hold down beams. No indications identified.
	2000	EVT-1	EVT-1 of adjusting screw tack weld (jet pump 7) and RS-2 & RS-3 on 5 of 10 risers. No indications identified.
	2002	EVT-1	EVT-1 of fifty (50) Medium priority weld locations. EVT-1 of transition region of two (2) hold down beams. No indications identified
	2004	EVT-1	EVT-1 of forty one (41) medium priority welds, to complete 50% baseline inspections. No indications identified.
Jet Pump Assembly (Cont.)	2004 (Cont.)	UT	UT performed on all twenty (20) hold down beams (3 zones, BB-1, BB-2, and BB-3). No indications identified.

Reactor Internals Inspection History

Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
		VT-1	VT-1 on all twenty (20) Inlet Mixer main wedges. Thirteen (13) jet pumps exhibited additional wear at main wedge-to-restrainer bracket interface. Performed expanded scope of inspections on these jet pumps. Set screw gaps identified at five (5) jet pumps. No additional problems identified. Installed eight (8) slip joint clamps and three (3) set screw auxiliary spring wedges, to mitigate wear believed to be caused by vibration.
	2006	VT-1, EVT-1, VT-3	VT-1 of twenty (20) WD-1 locations. EVT-1 of five (5) IN-4 welds, and two (2) riser braces-to-vessel attachment welds. VT-3 of eight (8) Slip Joint Clamps and three (3) Auxiliary Spring Wedges. Expanded EVT-1 scope on three (3) jet pumps due to WD-1 findings.
	2008	UT	UT exams performed on all 20 jet pump hold down beams. No indications identified.
		VT-3	Visual inspections performed on 5 auxiliary spring wedges installed. No indications identified.
		EVT-1	EVT-1 of 50 medium and high priority welds including; riser brace leaf to yoke welds, riser pipe to riser brace welds, riser elbow to thermal sleeve, and riser elbow to riser pipe welds. No indications identified. Expanded EVT-1 scope on one jet pump due to WD-1 findings.

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Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2008 (Cont.)	VT-1	VT-1 of twenty (20) WD-1 locations. Re-examined previously identified wedge wear with no apparent changes noted on 19 of 20 inspections. One main wedge had additional wear into the restrainer bracket. BWRVIP 41 expanded scope inspections were performed with no additional indications identified. One Slip joint clamp was installed on the affected Jet Pump.
	2010	VT-3	VT-3 of two slip joint clamps. No indications identified
		VT-1	VT-1 of all twenty (2) JP main wedges. No new/additional wear identified. VT-1 of all JP set screws for gaps. Minor gaps identified on seven JPs. Five (5) accepted for continued service by engineering analysis. Two (2) were corrected by tapping down on the main wedge.
		EVT-1	EVT-1 of 37 medium and high priority welds including; riser brace leaf to yoke welds, riser pipe to riser brace welds, riser elbow to thermal sleeve, and riser elbow to riser pipe welds. No indications identified. Completed BWRVIP Letter 2009-202 required inspections
	2012	VT-3	VT-3 of seven slip joint clamps. Minor wear detected on JP 15 slip joint clamp. Wear was acceptable for continued use and will be re-inspected next outage.

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Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Cont.)	2012 (Cont.)	VT-1	VT-1 of all twenty (20) JP main wedges. New wedge wear identified on JP 16 and accepted for continued use. New wedge rod wear identified and accepted for continued use on JPs 1, 2, 5, 10, 11, 12, 14, 17 and 20. VT-1 of three (3) auxiliary wedges. Minor wear identified on two (2) aux wedges and accepted for continued use. VT-1 of set screw gaps were performed on seven (7) JPs. Five of the jet pumps had minor gaps which were acceptable for continued use by an engineering analysis.
Jet Pump Assembly (Cont.)		EVT-1	EVT-1 of 20 medium and high priority welds including; riser brace leaf to yoke welds, riser pipe to riser brace welds, riser pipe to transition piece weld, riser brace leaf to RPV Pad Weld, riser pipe to restrainer bracket circumferential weld and the bottom of the nozzle casting to the top of the mixer assembly weld (IN-4). No indications identified.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2014	VT-3	VT-3 of nine (9) slip joint clamps. Minor wear detected on JP 05 and JP 15 slip joint clamps. Wear was acceptable for continued use and will be re-inspected next outage. New slip joint clamps were installed on JP 16 and JP 20 as a result of new wear on the belly band, and restrainer bracket. VT-3 of eight (8) auxiliary wedges. Minor wear identified on two (2) aux wedges and accepted for continued use. The auxiliary wedges on JPs 10 and 18 were found in the over-travel and were replaced. The aux. wedge on JP20 was also found in the over-travel position and a slip join clamp was installed which resulted in no set screw gaps. Both aux wedges on the shroud side and vessel side on JP 20 were then removed.
Jet Pump Assembly (Cont.)	2014 (Cont.)	VT-1	VT-1 of all twenty (20) JP main wedges. Slight new wedge wear identified on JP 16 and accepted for continued use. The wedges on the bottom side on JPs 13 and 16 appeared to be lower. New wedge rod wear identified and accepted for continued use on JPs 06, 13 and 20. VT-1 of set screw gaps were performed on jet pumps without a slip joint clamp or auxiliary wedge. All as-left gaps were acceptable for continued use and none exceeded the 0.010" criteria for installation of an auxiliary wedge.

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Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2016	VT-1	VT-1 of four (4) slip joint clamps. Minor wear detected on JP 05 SJC. Wear was acceptable for continued use. VT-1 of (20) main wedges. New wedge rod wear identified on JP 03, 13 and 16 and accepted for continued use. The wedges on JPs 12, 14 and 20 appeared to be lowered.
		VT-3	VT-3 of three auxiliary wedges. Minor wear identified on JP 13 and 18 aux wedges and accepted for continued use.
		EVT-1	EVT-1 of 28 medium and high priority welds including riser pipe to riser brace welds, riser elbow to thermal sleeve, inlet and mixer connections, riser elbow to riser pipe welds etc. A 1 5/8" flaw was noted on JP11/12 RS-1 weld and was accepted as is with re-inspection next outage in 2018.
	2018	UT	UT exam performed on all 20 jet pump hold down beams. No indications identified.
Jet Pump Assembly (Cont.)	2018 (Cont.)	VT-3	VT-3 of 8 slip joint clamps (SJC) was performed. JP05 and JP15 SJC had wear identified previously with no change in this outage. All others inspected had no recordable indications. VT-3 of 6 Auxiliary Wedges (JP12 SS, JP13 VS, JP14 VS, JP18 SS, JP19 SS, and JP19 VS) was performed. New minor wear was observed on JP19 VS Aux Wedge. No change in conditions of other aux wedges. All were evaluated as acceptable without repair.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
		VT-1	VT-1 of (10) main wedges. No change in any previous condition was identified. All indications were evaluated as acceptable.
		EVT-1	EVT-1 exam of 32 medium and high priority welds was performed including several riser pipe welds and riser brace leaf welds. One previous indication on JP11/12 RS-1 weld was re-inspected with no change in condition. No other indications were identified.
Jet Pump Diffuser	1998	MVT-1	MVT-1 of: AD-1 & AD-2 welds on 12 of 20 pumps, AD-3A & B welds on 11 of 20 pumps, and DF-2 weld on 10 of 20 pumps. No indications identified.
	2000	EVT-1	EVT-1 of AD-1, -2, -3a, -3b, and DF-2 on jet pumps 1 through 10. No indications identified.
	2002	EVT-1	EVT-1 of ten (10) High priority weld locations. No indications identified.
	2004	EVT-1	EVT-1 of eleven (11) medium priority weld locations, to complete 50% baseline inspections. No indications identified
Jet Pump Diffuser (Cont.)	2006	UT	UT of ninety eight (98) Diffuser / Adapter welds and six (6) Inlet Mixer welds. One 2" indication found on DF-2 weld, JP 17. Structural and leakage evaluations found indication acceptable for continued service.
	2010	EVT-1	EVT-1 of JP 17 DF-2 weld from the ID to look for any visual indication of the flaw identified by UT in 2006. 100% coverage of the ID was achieved, no indication was identified.

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Plant: Peach Bottom Atomic Power Station, Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2012	EVT-1	EVT-1 of JP-17 DF-2 weld from the ID to look for any visual indication of the flaw identified by UT in 2006. 100% coverage of the ID was achieved, no indication was identified. This examination was a recommendation from the 2012 BWRVIP INPO review visit.
	2016	EVT-1	EVT-1 of (60) Diffuser / Adapter welds. Indications were identified on (11) Jet Pumps out of 20 AD-3a/b backing ring. Largest indication on JP03 ~3.6 inches. Indications were acceptable as is with re-inspection next outage. EVT-1 of JP-17 DF-2 weld from the OD to look for any visual indication of the flaw identified by UT in 2006. 40% coverage of the OD was achieved, all suspect areas were investigated and no indication was identified.
	2018	UT	UT exams of AD-2, AD-1, AD-3a, AD-3b, DF-3, and DF-2 welds on all 20 jet pumps were performed. One previously identified indication on JP17 DF-2 weld was found to be 2.3" in length. Structural and leakage evaluations for the indication were acceptable for continued service. No additional indications were identified.
		EVT-1	EVT-1 of the DF-1 weld on 5 jet pumps was performed. No indications were identified.
CRD Guide Tube	1992	VT-3	VT-3 examination of housings accessible from fuel cells 26-31 and 30-27. No indications identified

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2002	EVT-1, VT-3	EVT-1 of three (3) welds on each of ten (10) Guide Tubes (locations 50-31, 42-11, 42-23, 42-51, 38-27, 38-35, 38-51, 34-23, 34-39, and 30-31). Some flow interference with examinations. VT-3 equivalent of anti-rotation pin on ten (10) Guide Tube locations. No indications identified
	2006	EVT-1, VT-3	EVT-1 of fifteen (15) CRGT welds, VT-3 of five (5) CRGT welds, verification of seventeen (17) CRGT alignment pins. One slightly bent pin identified. Pin remains functional. Condition found acceptable. No other indications identified.
	2008	EVT-1	EVT-1 of nine (9) CRGT welds. No indication identified. Also, verification of eight (8) CRGT welds and (8) CRGT alignment pins.
	2010	EVT-1	EVT-1 of four (4) CRGT welds. No indications identified. All BWRVIP-47 baseline examinations have been completed.
CRD Stub Tube	1992	VT-3	VT-3 examination of stub tube welds accessible from fuel cells 26-31 and 30-27. No indications identified.
In-Core Housing	1992	VT-3	VT-3 examination of housings accessible from fuel cells 26-31 and 30-27. No indications identified.
Dry Tube	1984	Replaced	All Dry Tubes replaced in 1984
	1994	VT-1	VT-1 examination of IRM Dry Tube 2D, at core location 37-32.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	1998	Replaced	All IRM and SRM tubes replaced w/ Wide Range Monitoring tubes in 1998. No inspections required.
Dry Tube (Cont.)	2016	Replaced	The 1998 WRNM replacement left four dry tubes as spares, with no detector installed. All four spare dry tubes were replaced in 2016.
Instrument Penetrations	1976 to present	PT	PT examination performed on all instrument nozzle to safe end welds once per interval, per Section XI. No indications identified.
LPCI Coupling			N/A for this plant
Vessel ID Brackets	1976 to present	VT-1 or VT-3	VT-1 and VT-3 of all ID bracket welds performed once per interval per ASME Section XI. No indications identified.
	2000	EVT-1	EVT-1 of six (6) Core Spray piping brackets. No indications identified.
	2002	EVT-1	EVT-1 of two (2) Core Spray piping brackets, two (2) Steam Dryer support brackets, and five (5) Jet Pump Riser brackets attachment welds. No indications identified.
	2004	EVT-1	EVT-1 of two (2) Steam Dryer support brackets and three (3) Jet Pump riser brace attachment welds.
		VT-3	VT-3 of four (4) Steam Dryer hold down brackets and three (3) lower surveillance brackets. No indications identified.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2006	EVT-1, VT-3, VT-1	EVT-1 / VT-3 of twelve (12) Feedwater Sparger attachment bracket welds. EVT-1 / VT-1 of two (2) Jet Pump riser brace-to-vessel welds. No indications identified. Minor anomalies incidentally identified on several FW Sparger bracket pins.
	2008	VT-3	VT-3 of 5 Feedwater Sparger end brackets and attachment pins
		EVT-1	EVT-1 of 2 Core Spray bracket attachment welds
Vessel ID Brackets (Cont.)	2012	VT-3	VT-3 of 6 feedwater sparger end brackets and attachment pins. Wear identified on 5 of the 6 feedwater spargers end brackets and/or attachment pins. Wear was acceptable for continued use.
		EVT-1	EVT-1 of 8 Core Spray bracket attachment welds. No recordable indications. EVT-1 of 4 steam dryer support brackets. No recordable indications.
	2014	EVT-1, VT-1, VT-3	EVT-1/ VT-3 of four (4) Steam Dryer support brackets. New wear was observed at locations 094 and 274 deg and acceptable with engineering evaluation. Previously noted wear was observed on 004 and 184 deg with no changes. EVT-1 of four (4) Jet Pump Riser brackets attachment welds. No indications identified. VT-1 of three (3) lower surveillance brackets. No indications identified.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2016	VT-3, EVT-1	EVT-1/ VT-3 of four Steam Dryer support brackets. New wear was observed at all locations and acceptable with engineering evaluation. The wear is consistent with the new footprint of the replacement dryer versus the OEM dryer, with the 40% increase in weight. EVT-1 of (3) Jet Pump Riser brackets attachment welds. No indications identified. EVT-1 of 2 Feedwater sparger end brackets and attachment pins. Wear identified was acceptable for continued use.
Vessel ID Brackets (Cont.)	2018	EVT-1	EVT-1 of the attachment welds of 8 Core Spray Brackets and 4 Steam Dryer Support Brackets. Minor contact was identified on the SDSB top surfaces due to seating of the replacement steam dryer. All conditions were evaluated as acceptable and no other indications were identified.
		VT-1	VT-1 of all 12 FW spargers end brackets and attachment pins. No change to wear identified previously on 5 pins. 1 pin (245 deg) identified with new wear. All conditions were evaluated as acceptable. VT-1 of 3 upper surveillance sample holder attachment welds to vessel. No indications were identified in the attachment welds.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
Surveillance Sample Holders	2018	VT-1	VT-1 of 2 surveillance sample holders (120 deg and 300 deg) was performed in accordance with BWRVIP letter 2018-045. Minor wear was identified at the upper bracket, right side corner of the 120 degree holder. This condition was evaluated as acceptable. No other indications were identified. The 30 degree holder and basket was removed from the vessel. The specimens from this basket will be tested in accordance with the Integrated Surveillance Program (ISP) and evaluated for impact accordingly.
Steam Dryer	2002	VT-1, VT-3	VT-1 of all drain channel welds. VT-1 of upper and lower dryer bank tie bar welds and baffle plate welds. VT-3 of dryer bank end and top covers, and instrument tubing and supports. One (1) central bank upper tie bar severed, and one (1) instrument tube support-to-baffle plate broken. Broken tie bar and instrument tube removed from dryer. New, stiffer tie bars welded to central dryer banks.
	2004	VT-1	VT-1 of five (5) replaced central bank upper tie bars, ten (10) original bank upper tie bars, and outer bank hoods @ internal reinforcing plates and end plate welds, per SIL 644, Supp.1. No indications identified.
	2006	VT-1	Completed all remaining BWRVIP-139 recommended inspections on seventy four (74) locations. One small indication (7/16") identified at base of drain channel vertical weld. No other indications identified.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2008	VT-1	Re-examined small indication (7/16") identified at base of drain channel vertical weld. No change noted. No other indications identified.
	2010	VT-1	Re-examination of small (7/16") indication at base of drain channel vertical weld. No change noted. BWRVIP-139-A re-examination of (six) key high stress (red) locations and five (5) tie bars. No indications identified. Examination of all four (4) lifting lugs. Indications identified on anti-rotation tack welds. Accepted continued service by engineering evaluation.
	2012	VT-1	Re-examination of small (7/16") indication at base of drain channel vertical weld. No change noted. BWRVIP-139-A examination of eight high stress (red) locations and seven (7) tie bars. No indications identified in high stress locations. Existing deformation was identified in two of the tie bars and was accepted for continued service by an engineering evaluation. Examination of all four (4) lifting rod assemblies identified existing indications on each lifting rod assembly. These indications were accepted for continue service by engineering evaluation.
Steam Dryer (Cont.)	2014	Replaced	As part of the EPU License Amendment Request (LAR), Exelon PBAPS replaced the Original Equipment Manufacturer (OEM) steam dryer with a 3-ring octagonal (Nordic style) Westinghouse dryer.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer (Cont.)	2016	VT-3, VT-1	VT-3 was performed on: - Top and sides (incl. outside of skirt) - underside of RSD (incl. inside of skirt) - W and U channel guides - hold down rods and lifting rods - outer, middle and inner hoods - and support ring. VT-1 of (71) recommended locations by the manufacturer. Indications were identified at bottom of the hold down rods on construction/ non-structural welds for all (4) HDRs and evaluated as acceptable as is with no repair. The welds will be reinspected next outage in 2018. No other indications identified
	2018	VT-3	VT-3-89 was performed on 18 locations: - Top and sides (incl. outside of skirt) - hold down rods and lifting rods - underside of support ring at seismic block contact patches Contact and minor wear was observed between underside of support ring and top of the invessel steam dryer support brackets. All conditions were evaluated as acceptable for continued service.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer (Cont.)	2018 (Cont.)	VT-1	VT-1 and VT-1-89 was performed on 134 locations: - underside of the dryer - W and U channel guides - ½ skirt circ weld - hold down rods and lifting rods - outer, middle and inner hoods, and - seismic block shim welds Previous indications at bottom of the hold down rods on construction/ non-structural welds for all (4) HDRs were found with no change in condition. The same location on the 37.75 deg lifting rod was also identified as flawed. All indications were evaluated as acceptable with no repair.
Steam Separator	2006	VT-1	VT-1 examinations performed on a sample of upper and lower shroud head bolt support ring gussets. 12 of 24 lower ring gussets revealed degradation. No indications on upper support ring gussets. Indications acceptable for continued service.
	2008	VT-1	VT-1 examinations performed on a sample of upper and re-examination of all lower shroud head bolt support ring gussets. 5 of 12 lower ring gussets with previously identified degradation had further crack growth and 4 lower gussets had new indications not previously identified. No indications were observed on the upper support ring gussets. All Indications are acceptable for continued service.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2010	VT-1	VT-1 examinations performed on a sample of upper and re-examination of all lower shroud head bolt support ring gussets. Slight growth at one previously identified indication. New indication identified on six (6) gussets. All new indications were minor and acceptable for continued service. Wear identified on one (1) shroud head bolt pin/window. SHB was removed.
Steam Separator (Cont.)	2012	VT-1	VT-1 examinations were performed on all mid support ring gussets with new indications identified. These indications were acceptable for continued service based on an engineering evaluation. VT-1 examinations were performed on three shroud head bolts with indications identified on all three. VT-1 of four upper support ring gussets revealed no indications. VT-1 of all four lifting lug assemblies revealed existing indications on all four assemblies. These indications were acceptable for continued service as a result of an engineering evaluation.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
	2014	VT-1, VT-3	VT-1 examinations were performed on all (24) mid support ring gussets with (4) new indications identified. These indications were acceptable for continued service based on an engineering evaluation. VT-3 examinations were performed on all (31) shroud head bolts with indications identified on (13) SHB. These indications were acceptable for continued service based on an engineering evaluation. Three (3) new SHB were installed as part of EPU. VT-1 of four upper support ring gussets revealed no indications and VT-1 of all four lifting lug assemblies revealed previously identified indications on all four assemblies with no changes.
	2016	VT-1, VT-3	VT-3 of (5) shroud head bolts, VT-1 of (4) upper support ring gussets and (8) middle ring gussets revealed indications that were acceptable for continued service based on an engineering evaluation. VT-1 of all four lifting lug assemblies revealed previously identified indications with no changes.
Steam Separator (Cont.)	2018	VT-1, VT-3	VT-1 and VT-3 exams of all four lifting lug assemblies revealed previously identified indications with no changes. VT-3 of (6) shroud head bolts, 5 of which had no changes identified from previous conditions and 1 had new minor wear identified on the side of the pin. All conditions were evaluated as acceptable.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
Dissimilar Metal Welds (BWRVIP-75-A)	2008	UT-E	Performed Manual UT on three (3) IGSCC Category D, dissimilar metal welds, all containing alloy 82/182 material. One indication identified on weld 2-AS-1 (Recirc Suction, N1A, Nozzle to Safe-end). Indication was not ID connected and determined to be a fabrication flaw after comparison to construction radiographs. Indication was found acceptable, no further analysis or repairs required.
	2010	UT-E	Performed Manual UT of three (3) IGSCC Category D, dissimilar metal welds, all containing alloy 82/182 material. No indications were identified.
	2012	UT-E	Performed Manual UT of six (6) IGSCC Category D welds. Three of these welds were dissimilar welds. One indication identified on weld 2-AS-1 (Recirc Suction, N1A, Nozzle to Safe-end). Indication was evaluated per the requirements of Table IWB-3514-2 of ASME Section XI and was found to be acceptable.
	2014	UT	Performed Manual UT of one IGSCC Category D dissimilar weld, 3-I-19R (RPV, Nozzle N9 to Cap). No indications were identified.
	2016	UT-E	Performed Auto UT of (3) IGSCC Category D DM weld and Manual UT of one IGSCC Category A DM weld. No indications were identified.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the following information: Inspection Results, Repairs, Replacements, Reinspections
Dissimilar Metal Welds (BWRVIP-75-A) (Cont.)	2018	UT-E	Performed Manual Automated UT of 2 IGSCC Category D DM welds. One indication identified on weld 2-AS-1 (recirc suction, N1A, Nozzle to Safe-end). Indication was evaluated per the requirements of Table IWB-3514-2 of ASME Section XI and was found to be acceptable. Performed Manual Phased Array UT of two IGSCC Category D DM Welds. No indications were identified.