

2010-195 _____ BWR Vessel & Internals Project (BWRVIP)

September 1, 2010

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

Attention: Jonathan Rowley

Subject: Project No. 704 – BWR Vessel and Internals Inspection Summaries for Fall 2009 Outages

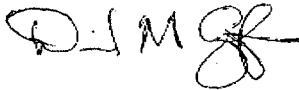
Enclosed are five (5) copies of the document entitled “BWR Vessel and Internals Project, Vessel Internals Inspection Summaries for Fall 2009 Outages, August 2010.”

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. Please note that the inspection summaries now include the results of the BWRVIP-75-A Dissimilar Metal Weld examinations. This information is being used by the BWRVIP to track the material performance of the associated vessel internal components. 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 call Chuck Wirtz, BWRVIP Integration Committee Technical Chairman, FirstEnergy, at 440.280.7665.

Sincerely,



Dave Czufin
Exelon
Chairman, BWR Vessel and Internals Project

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G004
NRR

BWR Vessel and Internals Project

**Vessel Internals Inspection Summaries
for Fall 2009 Outages**

August 2010

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Reactor Internals Inspection History

Plant: **Cooper Nuclear Station**

Component in BWRVIP Scope	Date or 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

	Fall 2006 (RE23)	UT	<p>indications were determined to be acceptable by analysis. No indications were observed in the vertical weld.</p> <p>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 indications were discovered in weld H7, one in a previously scanned location and the other in an area not previously scanned.</p>
		VT-3	<p>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.</p>
	Spring 2008 (RE24)	VT-3	<p>Performed first ASME B-N-2 VT-3 successive examination of flaw discovered in base metal behind JP-19. No changes in the indication.</p>
Shroud Support/ Access Hole Covers	1993-1995	VT-1 and UT	<p>VT-1 examinations of welds on 50% of core plate each outage. No indications. UT of access hole covers (AHC) in 1993. No indications.</p>
	Spring 1997 (RE17)	VT-3	<p>VT-3 examinations on 50% of the core shroud support plate. No indications.</p>
		VT-1	<p>VT-1 examinations of AHC in accordance with GE SIL 462. No</p>

	Fall 1998 (RE18)	VT-3	indications. 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 greater than 10% 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.
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	UT	UT examination of CS P8a and P8b

	(RE17)		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 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 of the 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

	Fall 2006 (RE23)	UT	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.
		EVT-1	UT examinations of P8b welds. Previous indications showed no change in size.
	Spring 2008 (RE24)	EVT-1	EVT-1 examinations of piping welds and bracket attachment welds. No new relevant indications observed.
	Fall 2009 (RE25)	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°.
		UT	EVT-1 examinations near P1 welds at 90° and 270°. No change with the indication near the P1 at 90° (Loop A). EVT-1 examinations 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°.
Core Spray Sparger	1980's to 1995	VT-1/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 1997 (RE17)	EVT-1	IEB 80-13 of welds on sparger. No indications.
	Fall 1998 (RE18)	EVT-1	EVT-1 examinations of sparger welds and brackets per BWRVIP-18. Debris (wire) in C-sparger Nozzle 15C identified. No other indications.
			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,s, two S2,s, 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°.
		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.
Top Guide (Rim, etc.)	1991-1995	VT	VT of top guide beams of 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 Alignment 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.
	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.
	Fall 2006 (RE23)	EVT-1	EVT-1 examinations of accessible areas of the Rim weld.
		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.
	Fall 2009 (RE25)	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.
		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% of top guide grid beams per BWRVIP-183. No indications.
		VT-3	VT-3 examinations of accessible areas of top guide per B-N-2.
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 – RE25)	VT-3	VT-3 examinations performed on accessible areas per B-N-2. 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	EVT-2/UT	Enhanced VT-2 performed of safe-end

	(RE22)		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.
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. 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 JPs 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-

	Spring 2008 (RE24)	EVT-1	1 of WD-1 at JP's 9, 10. No indications. EVT-1 of RS-1 and RS-2 on JP's 15/16 and 19/20.
		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-1 examinations 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-1 examinations on RS-3's on JP's 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.
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 examinations on DF-1 at JP-14 in addition to UT.

	Fall 2009 (RE25)	EVT-1	<p>Appeared to be a defect from original construction.</p> <p>EVT-1 examinations of indication to DF-1 on JP-14 identified during the previous outage. No change.</p>
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.
	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-3 welds. No indications.
	Fall 2009 (RE25)	EVT-1	EVT-1 examinations on one (1) CRGT-2 weld and two (2) CRGT-3 welds. 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.
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 N-16A 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 (RE22)	VT-2	VT-2 examination performed during RPV system leakage test. No indications.
		UT	UT examination of N16 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.
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	VT -1/VT-3	VT-1/VT-3 ASME Section XI

	(RE17)		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 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 pat attachment welds at 60°, 90°, and 120°. 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 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).
Dissimilar metal welds	Spring 2008 (RE24)	UT	Automated UT performed on four (4) CAT A welds per Appendix VIII. Manual UT performed on 2 CAT A welds. All welds included in Risk-Informed ISI Program. No indications.

Reactor Internals Inspection History

Plant: **Dresden Unit 2**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping	1980s to D2R14	UT, VT-1 (1MIL)	IEB 80-13 (1 MIL) VT-1 of piping and welds in annulus. Indications observed at one lower elbow to riser weld (3P4c) and two collar to shroud pipe welds (3 and 4P8a) in 1995. All flaw lengths verified with UT. Full structural margins met on all three flawed welds for additional cycle. No repairs performed.
	3/1998 D2R15	UT, 0.0005" EVT	GE CSI-2000 Inspected with EVT-1 supplement for unqualified welds (P8a and P4d). Identified three previously unidentified flaws (1P5, 2P8a and 3P4d) for a total of six flaws. All flaws were analyzed for two additional cycles of operation with no repairs required. Previously identified flaws were determined to be of the same or less extent than originally sized. 1P5 and 2P8a were not visually verified.
	10/2000 D2R16	EVT-1	Core Spray Piping: P8a and P4d, EVT-1 @ all four locations. Previous indications have been found on the Core Spray Elbow to Collar on the 260° Downcomer. The results of the 1999 measurements compared with the two previous 1998 indications are as follows. It appears that the Collar indication has not changed, while the indication on the elbow is larger this year than was seen in 1998. The noted crack growth was bounded by the previous flaw evaluation and the BWRVIP-18 crack growth value.
	10/2001 D2R17	UT, EVT-1	GE CSI-2000 inspected a complete Target Set and a sample of P4 welds. No new flaws. Growth within Fracture

			<p>Mechanics Evaluation predictions. Performed EVT-1 of undemonstrated welds.</p> <p>10/2003 D2R18</p> <p>EVT-1, VT-1</p> <p>Excessive grinding exam of 1-4P4a and b (VT-1). Undemonstrated 1-4P8a and P4d (EVT-1). Flaws are unchanged.</p> <p>11/2005 D2R19</p> <p>UT, EVT-1</p> <p>GE CSI-2000 inspected all demonstrated welds. Previous flaws re-sized, growth within flaw evaluation and BWRVIP-18 predictions. EVT-1 all undemonstrated welds. No new flaws identified. EVT-1 25% (2) piping bracket assembly welds. NRI.</p> <p>11/2007 D2R20</p> <p>EVT-1</p> <p>EVT-1 of piping welds P1, P2, P3 P8a, P8b and 25% of P4a, P4b, P4c and P4d in accordance with BWRVIP-18. RIs for previous indications in 3P4d, 3P8a, 4P8a.</p> <p>11/2009 D2R21</p> <p>EVT-1</p> <p>EVT-1 of all P1, P2, P3 and 25% of P4a & b piping welds in accordance with BWRVIP-18. NRI.</p> <p>Performed Core Spray Lower Sectional Replacement on all four lines. Welds P4c & d, P5, P6, P7, P8a & b and P9 all replaced. One P9 weld was examined after the old pipe was removed with no relevant indications. The other three P9 welds were destroyed by the EDM cut and could not be inspected.</p>
Core Spray Sparger	1980s to present	VT-1 (1 MIL)	IEB 80-13 (1 MIL) VT-1 of spargers and tee-boxes. No indications found. Future inspections per BWRVIP-18.
	3/1998 D2R16	EVT-1, MVT-1	End caps, cover plates and tee box branch welds were EVT-1 examined (OD). All sparger connections and bracket welds were MVT-1 examined. NRI.
	10/2001	EVT-1,	Complete Target Set and 50% of S3

	D2R17	VT-1	welds. No Indications recorded.
	11/2005 D2R19	EVT-1, VT-1	EVT-1 100% S1; S2; S4. NRI. VT-1 50% S3. NRI. VT-1 100% (12) SB. NRI.
	11/2009 D2R21	EVT-1, VT-1	EVT-1 100% S4. NRI. VT-1 50% S3. NRI. VT-1 100% (12) SB. NRI. S1 and S2 structurally replaced by bracket as part of lower sectional replacement.
Vessel ID Brackets	4/1994 D2R15	VT-1	Section XI inspections of jet pump riser brace, dryer, feedwater sparger, core spray, and surveillance capsule holder brackets, performed once per interval. No indications noted.
	3/1998 D2R16	MVT-1	Inspected Core Spray Brackets per BWRVIP recommendations. NRI.
	10/2000 D2R17	VT-1 VT-3 EVT-1	100% (6) Surveillance Capsule Brackets. NRI. 100% (6) Guide Rod Attachments. NRI. EVT-1 100% (4) Dryer Lugs. NRI.
	10/2003 D2R18	EVT-1, VT-1	EVT-1 100% (4) Dryer Lugs. NRI. Eight feedwater sparger end-brackets VT-1, NRI. Eight Core Spray piping bracket welds, EVT-1, NRI.
	11/2005 D2R19	EVT-1, VT-1	- EVT-1 100% (8) feedwater sparger end bracket to vessel attachments. NRI. - VT-1 100% (8) feedwater sparger end bracket lug. NRI. - EVT-1 100% (8) feedwater sparger end bracket pin tack weld. NRI. - VT-1 feedwater sparger repair at 240°. RI. Hole in the weld of the repaired nozzle. Accepted as-is. - EVT-1 25% (2) core spray piping bracket to vessel attachments. NRI. - EVT-1 100% (4) steam dryer wall support lugs. NRI.

	11/2007 D2R20	EVT-1 VT-3	<ul style="list-style-type: none"> - EVT-1 and VT-3 of 25% of Core Spray piping brackets (2). NRI - EVT-1 100% (8) feedwater sparger end bracket pin and nut. RI, some wear identified at pin head to bracket interface on three pins. One nut not tight against shoulder.
	11/2009 D2R21	EVT-1 VT-1	<ul style="list-style-type: none"> - EVT-1 of 25% of Core Spray piping brackets (2). NRI - VT-1 100% (8) feedwater sparger end bracket pin and nut. RI, some wear identified at pin head to bracket interface on six pins.
Core Shroud	8/1995 D2R14	EVT-1, UT	<p>Inspections per BWRVIP Guidelines of all shroud repair design reliant structures prior to installation of comprehensive repair (4 GE designed tie-rod assemblies). Inspection of shroud consisted of EVT-1 of all ring segment welds (accessible surfaces), EVT-1 of between 43% and 72% of the length of each vertical weld between H1 & H2 from OD surface (ID not accessible), UT of between 30% and 50% of the length of each of the 6 beltline vertical welds, EVT-1 of between 43% and 72% of the length of 2 of the 3 vertical welds between H6 & H7 from OD surface (ID not accessible), and UT of 35% of the length of the remaining vertical weld between H6 and H7.</p> <p>No Reportable Indications.</p>
	03/1998 D2R15	VT-1, VT-3	Shroud repair hardware inspected per GE recommendations. NRI.
	10/1999 D2R16	UT & EC	<p>UT & EC examinations from the ID with the TEIDE 2 manipulator on the core shroud vertical welds V14, V15, V16, V17, V18, and V19 per the requirements of BWRVIP-76 for a repaired shroud.</p> <p>NRI. Coverages are as follows: V14: 80.1%</p>

			V15: 80.1% V16: 83.4% V17: 52.6% V18: 62.8% V19: 58.0%
	10/2001 D2R17	EVT-1	<p>Exelon performed one sided EVT-1 of all vertical welds outside of the beltline with 100% coverage including welds V5, V6, V7, V26, V27 and V28. There were no recordable indications.</p>
	11/2005 D2R19	EVT-1, VT-1	<p>EVT-1 100% (16) Ring Segment Welds from the OD. NRI. Coverages were 100% except for the following:</p> <p>V9: 85% V11: 95% V20: 0% (inaccessible due to Jet Pump diffuser) V21: 90% V24: 0% (inaccessible due to Jet Pump diffuser)</p> <p>Attempted EVT-1 of shroud vertical welds V29, V30, V31, V32. 0% coverage was achieved due to Jet Pump interference.</p> <p>Performed 10 year shroud tie rod examination of all four tie rods:</p> <ul style="list-style-type: none"> - EVT-1 of the clevis pin to verify if bottomed in slot and checking contact area for movement. NRI. - VT-1 of stabilizer assembly contact between the RPV wall and upper contact, mid support, and lower contact. RI @ 20 and 110 degrees. Accepted as-is. - VT-1 of retainer devices at lower support, lower spring to tie-rod connection, upper spring jacking bolts and tie rod nut. NRI. - VT-1 of contact of the stabilizer assembly between the shroud and upper and lower springs. NRI. - VT-1 of the core plate wedge contact. NRI.

	11/2007 D2R20	UT EVT-1	- Performed UT on the following vertical welds with the percent coverage shown: V14: 19.9% V15: 85.8% V16: 90.1% V17: 35.0% V18: 84.0% - RI, Accept as-is. V19: 47.2% V27: 63.9% Besides V18, all other welds NRI EVT-1 of welds V05-V07, V19, V26, V28, V29 and V31. NRI
	11/2009 D2R21	EVT-1 VT-3	- Shroud repair hardware inspections at all four locations. NRI.
		EVT-1	Two sided EVT-1 on V19. NRI
Shroud Support	3/1993 D2R13	UT/VT-1	Access hole cover proactively replaced with GE mechanical design. UT for radial flaws performed prior to replacement. No indications identified.
	8/1995 D2R14	EVT-1, VT-1	EVT-1 of H8 and H9 for approx 12" at 4 locations of shroud repair hardware attachment areas. VT-1 of both replacement access hole cover assemblies. No indications identified.
	3/1998 D2R15	N/A	Not Inspected during D2R15
	10/1999 D2R16	EVT-1	Core Support Structures, Performed EVT-1 of H8 and H9 Welds per BWRVIP-38 requirements. No Recordable Indications Inspected both Shroud Access Hole Cover repairs, NRI.
	11/2005 D2R19	EVT-1, VT-3	EVT-1 H8 & H9 from 132-177°. NRI. VT-3 H9 100% accessible areas. NRI.
Top Guide	8/1995 D2R14	VT-1	VT-1 of 5 cells. NRI. VT-1 of all 4 alignment assemblies. NRI. VT-1 of rim to bottom plate weld at 4

	3/1998 D2R15	N/A	locations. NRI. No inspections during D2R15.
	10/2000 D2R16	EVT-1	Top Guide Alignment Pins, EVT 90° and 270° and Rim to Lower Plate Weld per BWRVIP-26. No Reportable Indications
	10/2003 D2R18	EVT-1 VT-1	Top Guide aligner assemblies at 0, 180° and 270° welds (EVT-1) and pin (VT-1), NRI
	11/2005 D2R19	EVT-1	Top guide rim weld at 235° on the outboard side of cell 03-30. NRI.
	11/2007 D2R20	EVT-1 VT-1	Top guide rim welds, aligner pins and sockets at 0° and 90°.
SLC	11/2005 D2R19	Enhanced VT-2	Safe end and nozzle examined. NRI.
	11/2007 D2R20	Enhanced VT-2	Safe end and nozzle examined. NRI.
	11/2009 D2R21	Liquid Penetrant	Safe end and nozzle examined. NRI
Jet Pump Assembly	8/1995 D2R14	VT-1 UT	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. Latest inspections were in 1995, with no reportable indications. Inspect 100% every other (even numbered) outage. Jet pump beams are UT examined each outage using technique capable of detecting cracking at throat and ears. One beam found cracked at ear in 1995 and was replaced.
	3/1998 D2R15	UT, EVT-1	D2R15 Beam UTs, NRI. Jet Pump Riser Welds RS-1,2,3,4 and 5

			<p>OD Inspected on all ten risers. Riser to JP Pair 15/16 has 1-1/2" long crack in elbow HAZ at RS-1. Evaluated for two cycles of operation without repair. NRI all others.</p>
	01/2000 D2R16	UT, EVT-1	<p>Jet Pump Beams, UT 100% of Beams NRI</p> <p>Riser Brace, Restrainer Bracket, Wedges and Inlet Mixers EVT-1 High/Medium Priority Welds Per BWRVIP-41 sample and inspection requirements. Minor Indications noted.</p>
	10/2001 D2R17	UT, EVT-1	<p>Jet Pump Beams, UT 100%, NRI</p> <p>Riser Brace Leaf at RPV wall block on JP#9, upper Rb 4 weld cracked. EVT-1 examined 100% scope expansion, no other indications. Checked and found no set screw gaps. Examined for B-N-2. Measured known RS-1 crack on riser 15/16. No change in last two cycles.</p>
	10/2003 D2R18	EVT-1	<p>Replaced all 20 Jet Pump Beams with BWR4 weldless keeper beams</p> <p>Installed 19 Riser Brace Mitigation clamps one Repair on JP#9.</p> <p>Measured flaw on JP#15/16 RS-1. Increased from 1 1/2" to 2" length. Identified pup piece present on JP#5/6,</p>
	11/2005 D2R19	EVT-1 VT-1 VT-3	<p>VT-1 100% (20) WD-1. NRI.</p> <p>VT-3 100% (20) Jet Pump Bream Tooth Engagement. NRI.</p> <p>VT-1 100% (8) Jet Pump Sensing Line Clamps. RI (2). Teeth not fully engaged. Accepted as-is.</p> <p>EVT-1 30% (3) RS-4, 5. NRI.</p> <p>EVT-1 50% (5) RS-1, 2, 3. RI on JP 15/16 RS-1. Size confirmed to be 1 1/2 ".</p> <p>VT-1 100% (20) Jet Pump Riser Brace Clamps. RI (8). Teeth on keepers not fully engaged. Accepted as-is.</p> <p>EVT-1 AS-1, 2 on Jet Pumps 8, 9, 19 (AS-1 only). NRI</p> <p>VT-1 Aux. wedge on VS of Jet Pump 11.</p>

	11/2007 D2R20	VT-1 EVT-1 VT-3	<p>NRI.</p> <ul style="list-style-type: none"> - VT-1 100% (8) Jet Pump Sensing Line Clamps. RI (7). Teeth not fully engaged. Accepted as-is. - EVT-1 of six RB-3 welds. NRI - EVT-1 of RS-1 weld on JP 15/16. RI on previously identified indication. No change in flaw size. - Swing gate replaced and 2 aux wedges installed on Jet Pump 19. - VT-3 of IN-5 bolting sets on 10 JPs. NRI - EVT-1 of MX-1 welds on 10 JPs. NRI - VT-1 of 5 JP wedges and swing gate keeper tack welds. One RI on JP 15 swing gate keeper degraded tack weld. Accepted as-is for one cycle. - VT-1 of ratchets on eight JP Riser Brace clamps and eight JP Sensing Line clamps. Multiple RIs for incomplete ratchet teeth engagement. Accepted as-is.
	11/2009 D2R21	EVT-1 VT-1	<ul style="list-style-type: none"> - EVT-1 25% (5) RB-4 & 5. NRI - EVT-1 30% (3 risers) RS-8 & 9. NRI - EVT-1 JP 15/16 RS-1. Previous indication - No change - EVT-1 25% (5) MX-3a and 40% (8) MX-3b. NRI - VT-1 25% (5) WD-1. NRI - VT-1 three aux wedges. Minor wear identified on one wedge. Accepted-as-is for one cycle. - VT-1 on five swing gate keepers/ratchets. One RI for crack in tack weld HAZ and Two RIs for small gap between gate and restrainer bracket. - VT-1 two sensing line clamps and one sensing line. No change to previous indications. - Replaced JP 15 swing gate.
Jet Pump Diffuser	8/1995 D2R14	VT-1	Diffuser to baffle plate welds on all 20 jet pumps. No indications.

	3/1998 D2R15	N/A	Not inspected D2R15.
	01/2000 D2R16	EVT-1	JP Diffuser EVT-1 High/Med Priority welds per BWRVIP-41 sample and inspection requirements. NRI
	10/2001 D2R17	EVT-1	No scope D2R17.
	10/2003 D2R18	UT, EVT-1	UT examined Jet Pumps# 2, 3, 4, 5, 8, 9, 12, 13, 14, 15, 18 and 19. This completes first 6 Year Inspection Interval. NRI EVT-1 of the last of the Medium Priority 50% sample also completed. NRI.
	11/2005 D2R19	N/A	Not inspected in D2R19.
	11/2007 D2R20	N/A	Not inspected in D2R19.
	11/2009 D2R21	EVT-1	- 25% (5) DF-1 and 50% (10) DF-2. NRI - 50% (10) AD-1, AD-2 and AD-3a. NRI
CRD Guide Tubes	8/1995 D2R14	VT-1 (1 MIL)	11 CRD guide tube lower assembly welds, 2 CRD guide tube upper assembly welds, 4 CRD guide tube alignment ear welds. NRI.
	3/1998 D2R15	N/A	Not inspected D2R15.
	01/2000 D2R16	N/A	Not inspected D2R16
	10/2001 D2R17	EVT-1, VT-3	5% inspected (9) per BWRVIP-47, CRGT-1, 2, 3 and pin. NRI.
	11/2005 D2R19	N/A	Not inspected in D2R19.
	11/2007 D2R20	EVT-1, VT-3	Inspected 5% (9) of the control Rod Guide Tube Welds and Guide Tube and Fuel Support Alignment Pins. VT-3 on the CRGT-1 and AS-GT-ARPIN-1.

			EVT-1 of the CRGT-2 and 3. NRI
CRD Stub Tubes	8/1995 D2R14	VT-1 (1 MIL)	14 CRD housing to CRD stub tube welds, 14 CRD stub tube to RPV bottom head welds, 3 CRD housing tube to housing cap welds. NRI.
	3/1998 D2R15		Not inspected D2R15
	10/2000 D2R16		Not inspected D2R16
	10/2001 D2R17		Stub Tubes not inspected D2R17
	10/2003 D2R18		Stub Tubes not inspected D2R18
	11/2005 D2R19		Not inspected in D2R19.
In-Core Housing	8/1995 D2R14	VT-1 (1 MIL)	4 incore guide tube to housing welds, 4 incore housing to RPV bottom head welds, 4 incore guide tube stabilizers. NRI.
	3/1998 D2R15		Not inspected D2R15
	11/2005 D2R19	N/A	Not inspected in D2R19.
Dry Tubes	8/1995 D2R14	VT-1	No indications identified. Examined every other outage.
	3/1998 D2R15		Not examined D2R15.
	10/2000 D2R16	VT-1	NRI.
	11/2007 D2R20	VT-1	50% of SRM and IRM dry tubes inspected. NRI
	11/2009 D2R21	VT-1	50% of SRM and IRM dry tubes inspected. NRI

Instrument Penetrations	N/A		
LPCI Coupling	N/A		
Steam Separator/ Shroud Head	11/2007 D2R20	VT-1	Inspected 100% of Shroud Head Bolt Alignment Pins and Windows. RI for one missing pin and pin/window wear on multiple shroud head bolts
	11/2009 D2R21	VT-1 EVT-1	<ul style="list-style-type: none"> - VT-1 Inspected 100% of Shroud Head Bolt Alignment Pins and Windows. RI for pin/window wear on multiple shroud head bolts - EVT-1 on Steam Separator Guide Rod top cone. RI for cracked tack weld. Acceptable-as-is.
Steam Dryer	11/2005 D2R19	VT-1 "best effort"	<p>Performed BWRVIP-139 required inspections as well as inspections of high-stress areas as determined by GE models. Internal start-up instrumentation piping was also examined. Several RI, including:</p> <ul style="list-style-type: none"> - Four of six gusset feet tip (adjacent to R2 weld), ranging from 7 to 11.5". Cracking was ground out and rewelded. Gusset feet extensions were designed and installed to transfer the stress riser to the mid-support ring. - Several internal strut/supports were identified with cracking. Several were historical from D2R18 inspections. No change in the cracking was observed. These welds are non-structural. Accepted as-is. - Vertical guide cracking (2) at 220°. Both cracks (2.5-5" in length) were stop-drilled. - Lower instrument line in Bank C observed cracking at the weld. Performed fracture mechanics analysis and lost parts analysis. Acceptable as-is. - Interior drain channel cracking (3). Performed GE analysis. Acceptable as-is. - Perforated plate weld cracking.

	11/2007 D2R20	N/A	Performed GE analysis. Acceptable as-is. - Perforated plate bowing. Performed GE analysis. Acceptable as-is.
	11/2009 D2R21	"Best Effort" VT-1	Replaced steam dryer with a new one. Examined critical components on steam dryer ID and OD after one cycle of operation per GE recommendations. NRI
DM Welds	11/2009 D2R21		No inspections in D2R21

Reactor Internals Inspection History

Plant: **Peach Bottom Atomic Power Station, Unit 3**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	1993	VT-1	Enhanced VT-1 (1 mil resolution) (100% ID of H-3, H4, & V-3) portions OD of H-1, H-2, H-3, H-4, H-5, H-6, and H-7 Prior to BWRVIP-01, Circumferential Indications on ID of H-3 and H-4 (Plate side, not ring side) Short circumferential indications on ID of V-3 weld. Evaluation of indications showed full structural margins for one operating cycle.
	1995	UT	Comprehensive UT Baseline of all Category "C" circumferential welds (H-1 through H-7). Baseline per BWRVIP-01, Rev. 1. Exams per BWR-VIP Core Shroud NDE Uncertainty and Procedure Standard, dated November 21, 1994. Indications identified on ID of H-1, H-3, H-4, and H-5. Full structural margins calculated using two cycles of crack growth. No indications identified on H-2, H-6, and H-7.
	1999	UT	UT Examination on welds H-3 & H-4. Re-identified indications on both welds. Extent of indications within existing structural analysis.
	2005	UT	Two-sided UT of all 7 horizontal welds (H1 thru H7) and 4 vertical welds (V3 thru V6). No indications at H2, H7, V4-V6 or ring side of any weld. One minor

			indication near V3. Indications at H1, H3, H4, and H5 correlated with those previously identified. One indication at H6 (new). One deep indication at H4. Characterized as thru-wall. Review of previous data (1995 and 1999) also characterized indication as thru-wall at that time. EVT-1 on OD surface did not identify any indications.
Shroud Support	1993	VT-1	Enhanced VT-1 (1 mil resolution), of portions of H-8 weld, No indications identified. VT-1 examination around perimeter of both access hole covers, No indications identified.
	1997	VT-1	VT-1 of both access hole cover bolted repairs. No indications identified.
	1999	EVT-1	10 % of weld length of welds H-8 & H-9 examined. No indications identified.
	2001	UT	10% of H-9 weld length from vessel O.D. No indications identified.
	2005	VT-1	VT-1 of both access hole cover bolted repairs. No indications identified.
		EVT-1	> 10% of H-8 weld, between jet pump banks, in area of AHCs.
		VT-1	VT-1 of both access hole cover bolted repairs. No indications identified.
		UT	Accessible length of H-9 between 0 and 180 degrees. No indications identified.
	2009	VT-1	VT-1 of both access hole cover bolted repairs. No indications identified.
Core Spray Piping	1980-present	VT-1	Enhanced VT-1 (1 mil resolution)

		(1 mil)	performed on piping and welds each refueling outage per IEB 80-13,
	1985	VT-1 (1 mil)	Cracking discovered at tee-box to header pipe weld. Welded repair plates installed on both header tee-boxes.
	1993	VT-1 (1 mil)	Cracking identified in downcomer slip joint (weld P-5), evaluation demonstrated structural margin for one operating cycle.
	1995	VT-1 (1 mil)	Additional cracking identified in 3 of 4 downcomer slip joint welds (P-5), repair clamps installed on all 4 downcomers to repair flawed welds.
	1997	VT-1	4 Downcomer repair clamps, no indications identified.
		EVT-1	All annulus piping welds, no indications identified.
	1999	VT-1	VT-1 Examination of A, B, C & D Downcomer Repair Clamps & both Header Teebox welded repairs. No indications identified.
	2001	VT-1	All target welds plus 25 % sample of piping butt welds examined. No indications identified.
		EVT-1	EVT-1 of all target welds plus 25% sample of butt welds examined. No indications identified.
	2003	VT-1	Four downcomer repair clamps.
		EVT-1	EVT-1 of all target welds plus 25% sample of butt welds. No indications identified.
	2005	EVT-1	Four Header Tee Box strong back repair plate welds. EVT-1 of all target welds plus 25%

	2007	EVT-1	sample of butt welds. No indications identified. Four Header Tee Box strong back repair plate welds. EVT-1 of all target welds plus 25% sample of butt welds. No indications identified.
	2009	VT-1 EVT-1	Four downcomer repair clamps. Four Header Tee Box strong back repair plate welds. EVT-1 of all target welds plus 25% sample of butt welds. No indications identified.
Core Spray Sparger	1980-present	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.
	1999	EVT-1	Examination performed on all Sparger Pipe welds.
		VT-1	Examination performed on all Brackets, Drains and 50 % of Nozzles. No indications identified.
	2003	EVT-1	Examination performed on all Sparger Pipe welds.
		VT-1	Examination performed on all Brackets, Drains and 50 % of Nozzles. No indications identified.
	2007	EVT-1	Examination performed on all Sparger Pipe welds.
		VT-1	Examination performed on all Brackets, Drains and 50 % of Nozzles. No indications identified.
Top Guide (Rim, etc.)	1987	UT	UT examination performed on 40 cells. No indications identified

	1993	VT-3	Visual (VT-3) examination of 9 cells (02-19, 46-11, 42-59, 58-19, 02-39, 10-51, 18-03, 22-03, and 58-35), per SIL 554. No indications identified.
	1995	VT-3	Visual (VT-3) of 3 cells (14-23, 22-31, and 46-23) per SIL 554. No indications identified.
	1976-present	VT-3	VT-3 examination every other refueling outage per Section XI. No indications identified.
	1997	VT-3	Top Guide Grid examined from above, no indications identified.
		VT-1	Adjacent aligner pins at 180 and 270 deg.(per VIP-26), no indications identified.
	2009	EVT-1	EVT-1 of five top guide cell locations per BWRVIP-183 requirements. No indications identified.
Core Plate (Rim, etc.)	1995	VT-3	VT-3 examination of hold down bolt retainers planned, deferred to 1997.
	1997	VT-1	Examined 18 of 34 bolts/retainers from above. No indications identified.
SLC	1997	UT	UT of nozzle to safe end planned for 1997, per BWRVIP recommendations
		PT & UT	PT & UT of nozzle to safe-end weld, no indications identified.
	2003	PT	Extended dwell time PT of SLC nozzle to safe end weld and entire safe end. No indications identified.
	2007	PT	PT of SLC nozzle to safe end weld. No indications identified.

Jet Pump Assembly	1974 to present	VT-3	Visual VT-3 of all jet pump components performed every other refueling outage. No indications identified.
	1981	VT & UT	VT and UT examination performed on all 20 hold down beams/ One beam found to be cracked, replaced with new style beam, All beams replaced with new style beam and reduced preload in 1988.
	1997	VT-3	VT-3 all 20 jet pump assemblies (all parts), including CSVT-1 (MVT-1) of 10 riser braces, including all welds. No indications identified.
		CSVT-1 (MVT-1)	CSVT-1 (MVT-1) all 10 thermal sleeve to riser elbow welds, plus UT on pumps 1/ 2, 9/10, 13/14 due to indications on thermal sleeve side of these welds. MVT-1 on welds RS-2 & RS-3 of three risers w/ indications @ 30, 150, and 300 degrees. Evaluation of indications justified continued operation for part cycle.
	1999	UT	Examinations performed on all 20 hold down beams. Reportable indications observed on hold down beam for jet pump # 20. Beam replaced. No other indications identified.
	2001	EVT-1	Examination of high priority Adapter welds on Jet Pumps 1-10. Reportable indications on welds (AD-3b) of Jet pumps 2 & 10. BWRVIP-41 evaluation resulted in use-as-is disposition. Expanded examinations to weld AD3b on Jet Pumps 11-20. No other indications identified. EVT-1 examination of high priority Diffuser Shell to Tailpipe Welds (DF-2) of Jet Pumps 1-10. No indications identified. Examination of Riser welds RS-2 & RS-

	2003	EVT-1	<p>3 of Jet Pump Assemblies 2, 3 & 4. No indications identified.</p> <p>Reexamined weld AD-3b on Jet Pumps 2 & 10. indications remain bounded by existing flaw evaluation.</p> <p>All 20 WD-1 locations examined. 16 high priority and 45 medium priority welds on inlet mixers, diffusers, and riser braces also examined. No indications identified.</p>
		VT-1	<p>VT-1 of all twenty hold down beam ratchet lock keepers (replaced in 2001). VT-1 all twenty WD-1 main wedge locations, since all inlet mixers were removed in 2001, Two auxiliary spring wedges installed in 2001, and the RS-1 repair clamp on JP 1 & 2 and 13 & 14. No indications identified.</p>
	2005	EVT-1	<p>Reexamination of indication at RS-1 weld on JP 9 & 10. Minimal change in flaw size. Structural reevaluation completed for continued acceptability.</p> <p>104% of High priority welds completed. 72% of Medium priority welds completed No indications identified.</p> <p>Indication identified in backing ring below AD-3a weld on JP 18. Structural evaluation found acceptable for continued operation.</p>
	2007	UT	<p>Two-sided UT of all diffuser and adapter welds (100) from I.D. Identified 4 small OD originating indications associated with the AD-3b fillet weld (2 previously ID'd). Structural and leakage evaluation proved acceptability for numerous operating cycles.</p>

	2009	VT-1	VT-1 of five main wedges. No wear identified.
		EVT-1	EVT-1 of 16 medium priority welds. No indications identified.
			EVT-1 of 3 existing indications. No appreciable change in indication size.
		VT-1	VT-1 of 10 main wedges and 2 RS-1 riser repair clamps. No indications identified.
		EVT-1	EVT-1 of 30 medium and high priority welds, 1 existing RS-1 weld indication and 12 riser brace welds. No growth of existing indication noted. Small indications identified at the RS-1 weld of two risers. Structural and leakage impact evaluations found indications acceptable for continued operation. No other indications identified.
		VT-1	VT-1 of 6 main wedges. Minor wear identified on 3 wedges. Expanded scope to examine all 20 main wedges and performed examinations on additional locations (AS-1/2, RS-6/7, RS-8, RS-9, MX-7) on the 3 JPs with identified wear. Two set screw gaps identified. No additional indications in expanded scope exams. No repair hardware required.
		EVT-1	EVT-1 of 31 medium and high priority welds. 3 existing RS-1 flaws were examined. – 1 existing indication exhibited no growth and was evaluated as acceptable for two cycles of continued operation. – 1 existing indication exhibited growth and was evaluated as acceptable for two cycles of continued operation.

		VT-3	<p>– 1 existing indication was determined to be the toe of the weld. No indication exists. No other indications identified.</p> <p>VT-3 of two aux spring wedges. No indications identified.</p>
Jet Pump Diffuser			See Jet Pump Assembly.
CRD Guide Tube	1985	VT-3	VT-3 PSI examination of 4 replacement CRD housings.
	1987	VT-3	VT-3 examination of one of replaced housings. No indications identified.
	1991	VT-3	VT-3 examination of housings accessible from fuel cells 26-31 and 30-27. No indications identified.
	1999	VT-3	VT-3 examination on Guide Tube welds CRGT-1 & Alignment Pin weld (Core Locations: 14-15, 14-31, 14-47, 18-19, 18-27, 18-35, 18-43, 26-11, 34-35, 42-19) No indications identified.
		EVT-1	EVT-1 examination on Guide Tube welds CRGT-2 & 3 (Core Locations: 14-15, 14-31, 14-47, 18-19, 18-27, 18-35, 18-43, 26-11, 34-35, 42-19) No indications identified.
	2003	EVT-1	Best effort EVT-1 on Guide Tube welds CRGT-2 & 3 (Core locations: 10-35, 22-27, 22-35, 30-23, 30-31, 30-39, 38-27, 38-31, 38-35, and 42-31) No indications identified.
		VT-3	VT-3 examination on Guide Tube welds CRGT-1 & Alignment Pin weld (Core Locations: 10-35, 22-27, 22-35, 30-23, 30-31, 30-39, 38-27, 38-31, 38-35, and 42-31) No indications identified.

	2005	EVT-1	EVT-1 on Guide Tube welds CRGT-2 & 3 (Core locations: 22-39, 38-39, 14-35, 46-35, 46-27, 22-23, and 26-11) No indications identified. CRGT-3 (22-39) later disqualified.
		VT-3	VT-3 examination on Guide Tube welds CRGT-1 & Alignment Pin weld (Core Locations: 22-39, 38-39, 14-35, 46-35, 46-27, 22-23, and 26-11) Alignment pin weld also at 14-27 and 38-23, No indications identified.
	2007	EVT-1	EVT-1 on Guide Tube welds CRGT-2 (Core locations 22-03, 30-15, 42-03, 46-55, 58-39) and CRGT-3 (Core locations 22-03, 30-15, 42-03, 46-55, 58-39). No indications identified. Verification of CRGT-1 (Core locations 22-03, 30-15, 42-03, 46-55, 58-39) alignment pins and alignment lug welds. No indications identified.
	2009	EVT-1	EVT-1 on Guide Tube welds CRGT-2 (Core locations 14-31, 22-31, 22-59, 30-47, 50-51) No indications identified.
CRD Stub Tube	1991	VT-3	VT-3 of accessible portions of 12 stub tubes (30-35, 26-35, 22-35, 22-31, 22-27, 26-27, 26-23, 30-23, 34-23, 34-27, 34-31, 30-31). No indications identified.
In-Core Housing	1991	VT-3	VT-3 of housings accessible from fuel cells 26-31 and 30-27. No indications identified.
Dry Tube	1997	N/A	All Dry Tubes replaced in 1985. All IRM and SRM tubes replaced w/ Wide Range Monitoring tubes in 1997. No inspections required.
Instrument	1976 to	PT	PT examination performed on all

Penetrations	present		instrument nozzle to safe end welds once per interval, per Section XI. No indications identified.
	1997	PT	PT nozzle to safe-end (coupling) & safe-end to pipe welds on 2 nozzles. (N12A & N12B). No indications identified.
	2001	PT	PT nozzle to safe-end (coupling) welds on 2 nozzles. (N11A & N16A). No indications identified.
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 No indications identified.
	1997	VT-1	All 10 Jet Pump riser brace to vessel welds, no indications identified.
	1999	EVT-1	EVT-1 examination performed on 8 Core Spray Bracket Pads @ 15, 117, 123, 165, 195, 237, 243 & 345 AZ. No indications identified.
	2001	EVT-1	EVT-1 examination performed on 4 Feedwater Sparger brackets @ 4, 56, 64, and 116 Az., 3 Jet Pump Riser Braces @ 90, 120, and 150 AZ., and 2 Steam Dryer Support Brackets @ 4, and 94 AZ. No indications identified.
	2003	VT-1	Lower Surveillance Specimen brackets at 30°, 120°, and 300°.
		VT-3	Upper Surveillance brackets at 30°, 120°, and 300°. Guide Rod brackets at 0° and 180°.
		EVT-1 & VT-3	Steam Dryer support brackets at 184° and 274°.
		EVT-1	Jet Pump riser brace to vessel welds JP 9/10 and JP 13/14. No indications identified

	2005	EVT-1	8 Feedwater sparger bracket welds and 16 jet pump riser brace welds. No indications identified.
	2007	EVT-1	8 Core Spray pipe support brackets and one jet pump riser brace. No indications identified.
		VT-3	4 Steam dryer hold down bracket welds. No indications identified.
LPCI Coupling			N/A for this plant
Steam Dryer	2003	VT-3	VT-3 of the entire top of the dryer (including all upper tie bars) and the 2 outer bank hoods and cover plates.
		VT-1	VT-1 of 5 new central bank upper tie bars (added in 2001), 2 stop-drilled indications at the lower guide rod followers, and all GE SIL 644, Supp. 1 locations on outer bank hoods. No indications identified. All previous repairs were satisfactory.
	2005	VT-1	Completed all remaining BWRVIP-139 recommended inspections (68 locations). No indications identified.
	2007	VT-1	VT-1 of 23 high stress welds and all upper tie bars. No indications identified
	2009	VT-1	Re-examination of six "red" end bank welds, two "green" drain channel welds, and welds on four lifting lugs per BWRVIP-139-A. No indications identified
Steam Separator	2007	VT-1	VT-1 examinations performed on a sample of upper and lower shroud head bolt support ring gussets. No indications identified.
	2009	VT-1	VT-1 examinations performed on a sample of upper and lower shroud head

			bolt support ring gussets. No indications identified.
Dissimilar Metal Welds (BWRVIP-75-A)	2009		No examinations scheduled.

Reactor Internals Inspection History

Plant: **River Bend**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	94	VT-1/VT-3	Partial inspection during forced outage. Welds H-3 thru H-7, Limited vertical weld inspection. No indication detected.
	96	VT-3	ASME XI inspection of accessible areas including the grid. No indications detected.
RF-7	97	UT	UT from OD, Welds H3, H4, H6A, H7 (No indications)
RF-12	Oct 2004	UT	UT From OD: Welds H6A and H7 (no indications)
RF-14	Jan. 2008	UT	H3 no indications 76.6% inspected H4 indications 92.7% inspected 9% weld flawed
Shroud Support	94	VT-1/VT-3	Inspection of accessible areas during forced outage. Access hole cover; VT. No indications.
	96	VT-3	Access hole cover. No indications.
RF-8	1999	VT-1	Access hole cover. No indications
RF-9	2000	EVT-1	Shroud Support to Shroud (No Indications)
RF-9	2000	EVT-1	Support Plate to Shroud (No Indications)
RF-10	Oct. 2001	VT-1	Access Hole Cover- No indications
RF-12	Oct 2004	VT-1	Access Hole Cover (No indications)
RF-12	Oct. 2004	UT	UT From Bio-shield wall H8 & H9 (no indications)
RF-14	Jan 2008	VT-2	Access hole cover NRI
Core Spray Piping	1987 to present	VT-1/VT-3	Piping and welds in annulus, every other cycle , starting 1994 every cycle. No indications.
RF-7	1997	EVT-1/MVT-1	BWRVIP-018 (Baseline Inspection) No indications
RF-8	Apr 1999	EVT-1/MVT-1	BWR VIP-018 No Indications

RF-9	March 2000	EVT-1/MVT-1	BWR VIP-018 No Indications
RF-10	Oct. 2001	UT	12 welds examined No Indications
RF-11	March 2003	EVT-1	17 welds examined No Indications
RF-12	Oct 2004	UT	8 welds examined No indications
RF-13	April 2006	EVT-1	8 welds examined No indications
RF-14	Jan. 2008	EVT-1	8 welds examined No indications
RF-15	Oct 2009	EVT-1	20 welds examined No indications
Core Spray Sparger	1987 to present	VT-1/VT-3	Nozzles, end caps, support (guides) , every other outage. Selected Tee (welds) every other outage. All tee (welds), end caps and nozzles each outage starting 1996.
RF-7	1997	EVT-1/MVT-1	BWRVIP-018 (Baseline Inspection) No indications
RF-8	Apr 1999	EVT-1/MVT-1	BWRVIP-018 No Indications
RF-9	March 2000	EVT-1/MVT-1	BWRVIP-018 No Indications
RF-10	Oct.2001	EVT-1, VT-1	BWRVIP-018-No indications
RF-11	March 2003	EVT-1/VT-1	36 welds examined No indications
RF-12	Oct 2004	EVT-1/VT-1	32 items examined no indications
RF-13	April 2006	EVT-1/VT-1	15 items examined no indications
RF-14	Jan 2008	EVT-1/VT-1	42 items examined no indications Includes spare brackets pin and pad, pad
RF-15	Oct 2009	EVT-1/VT-1	28 items examined one of two tacks welds cracked on alignment pin at the

			276 degree azimuth annulus side
Top Guide (Rim, etc.) RF-14	1987 to present Jan. 2008	VT-3 VT-3	100% per Interval (Hold down studs, nuts and keeper). No indications. No indications
Core Plate (Rim, etc.) RF-14	N/Access Jan 2008	N/A VT-3	N/A 8 exams (Jet Pump disassembled)
RF-12 SLC	Oct 2004	Enhanced VT-2	VT-2 inspection of N11 nozzle at vessel hydro No leakage observed
RF-13 SLC	April 2006	Enhanced VT-2	VT-2 inspection of N11 nozzle at vessel hydro No leakage observed
RF-14	Jan 2008	Enhanced VT-2	VT-2 inspection of N11 nozzle at vessel hydro No leakage observed
RF-15	Oct 2009	Enhanced VT-2	VT-2 inspection of N11 nozzle at vessel hydro No leakage observed
Jet Pump Assembly	1987 to present	VT-1/VT-3	Twenty pumps. 1/3 inspected each period first Interval(Diffuser Assembly, Riser Assembly, Riser Braces, inlet suction area, riser brace, wedge assembly, Hold down beam (bolt keeper and tack welds). Wedges, adjusting screws (tack welds), sensing lines receive VT per various SILs. Jet Pump Beams replaced 1994. VT of complete assemblies in 1994 forced outage.
RF-7	1997	EVT-1 MVT-1 MVT-1	Jet Pump Riser Elbow Welds No indications Jet Pump Riser Brace Welds (6 of 10) No indications
RF-8	1999	EVT-1	Restrainer Assembly (6 of 10) No movement
RF-10	Oct. 2001	EVT-1	Riser Pipe to Transition Piece (Limited Access) No Indications (5 ea) Inlet elbow to sleeve weld, inlet sleeve to nozzle weld, restrainer bracket wedge, riser pipe of the upper brace and lower brace attachment yoke welds (6 welds inspected

RF-11	March 2003	EVT-1	<p>RB welds 14 welds examined JP-11 thru 20, No Indications</p> <p>RS-3 weld 5 welds examined JP-11 thru 20 No Indications</p> <p>RS-6 weld 10 welds examined JP-11 thru 20 No Indications</p> <p>RS-7 weld 10 welds examined JP-11 thru 20 No inactions</p> <p>RS-8 weld 5 welds examined JP-11 thru 20 No Indications</p> <p>RS-9 weld 10 welds examined JP-1 thru 20 One indication found JP-19/20 riser brace</p> <p>IN-1/IN-2 weld 10 welds each examined JP-11 thru 20 No indications found</p> <p>DF-1, DF-2, DF-3A, DF-3B weld 10 welds each examined JP-11 thru JP-20. No indications found.</p> <p>AD-2 weld 10 welds examined JP-11 thru JP-20 No indications found</p> <p>WD-1 weld 6 welds examined JP-11,12,13,14,19 and 20 No indications found</p>
RF-12	Oct. 2004	EVT-1/VT-1	RS-9 previous crack found in RF-11(Qty 1) & RS-8 (Qty 1) & WD-1 (Qty 1)
RF-13	April 2006	EVT-1	RS-9 reinspection previous crack & RS-8
RF-14	Jan. 2008	EVT-1/VT-1	<p>JP-19/20 –RS-8 & 9 AD-1, AD-2, DF-3a, b , IN-1 & 2, WD-1, DF-1, 2 (Jet Pump disassembly)</p> <p>JP-1 thru 20 RB-1a,b,c,d, No indications except for previously reported RS-9 indication</p>
RF-15	Oct 2009	EVT-1/VT-1 VT-3/UT	<p>VT-3 -JP-1 thru 20 sensing lines at welded attachment & penetration. JP 1 thru 10- 140 welds and 10 expanded scope of the AD-2 welds. AD-2 indication at JP 4, UT was performed at the AD-2 from inside and indication was found non-relevant VT-1 of WD-1 wedges at JP 19/20</p>
Jet Pump Diffuser	see Jet Pump	N/A	N/A

	Assembly		
CRD Guide Tube RF-4	1992	VT-3	Inspected accessible tubes during bottom head drain line replacement. No indications observed.
CRD Stub Tube	N/A	N/A	N/A
In-Core Housing	92, 96	VT-3	Upper portion only per Sil recommendation. No indications.
RF-8	1999	VT-1	Upper portion per GE recommendations (7 ea.)
RF-11	March 2003	VT-3/VT-1 EVT-1	Examined 15 CRDM Total of 60 welds No indications found
RF-14	Jan 2008	VT-3	QTY-2 CRDH assembly NRI
Dry Tube RF-11	March 2003	VT-1	IRM/SRM dry tubes QTY 10 inspected No indications
RF-14	Jan 2008	VT-1	Inspected 11 of 12 5 dry tubes had indications one dry tube deferred until RF-15
RF-15	Oct 2009	VT-1	Examined QTY-1 IRM and QTY-9 LPRM's no indications. Replaced 5 dry tubes with indications found in RF-14
Instrument Penetrations	1994	VT-3	Inspected penetration at vessel during forced outage. No indications noted.
Vessel ID Brackets	1987 to present	VT-1/VT-3	Section XI inspections once per interval, VT-3, or VT-1 if in beltline region. No indications noted.
Vessel Interior	Oct 2004	VT-3	Vessel cladding area as required by section XI No indications
Vessel Brackets	Jan 2008	VT-3, EVT-1	Feedwater brackets, Core Spray brackets, Steam Dryer brackets NRI
RF-14 Vessel Interior	Jan 2008	VT-3	Vessel Cladding
LPCI Coupling	1989, 92	VT-3	Two of three lines in 1989 and two of three lines in 1992. No indications.
RF-8	1999	MVT-1	No Indications (1 ea.)
RF-9	2000	EVT-1	No Indications (2 ea.)

RF-12	2004	EVT-1	9 welds inspected No indications
RF-15	Oct 2009	EVT-1	7 welds examined no indications
Steam Dryer			
RF-9	2000	EVT-1	Indications identified CR-RBS-0686
RF-10	2001	EVT-1	Indications less than 4.5 inches
RF-11	2003	EVT-1	Indications less than 4.5 inches
RF-12	2004	VT-3	Indications less than 4.5 inches
RF-13	2006	EVT-1	New Indication identified dryer shirt ¾" long Ref. CR-RBS-2006-01770, indications identified in RF-9 less than 4.5"
RF-14	Jan 2008	VT-1	BWRVIP-139 exam 2 cracks found and repaired welds V14 and V27 Upper support ring indications greater than 4.5
RF-15	Oct. 2009	VT-1	JCO re-inspect next outage Re-examined indications and repaired welds on upper support ring, V-14 and V27 from RF-14 no changes noted
Feedwater Sparger Repair areas at AZ 45 & 135 degrees			
RF-7	1997	VT-1	No Indications
RF-8	1999	VT-1	No Indications
RF-9	2000	VT-1	No Indications
RF-10	2001	VT-1	No Indications
RF-11	2003	VT-1	No Indications
RF-12	2004	EVT-1	No indications
RF-13	2006	EVT-1	No indications
RF-14	Jan. 2008	EVT-1/VT-3	Qty-8 Brackets to vessel and end brackets -NRI End brackets had ware on pins re-inspect next outage
RF-15	Oct 2009	VT-1	Re-inspected feedwater end brackets and the repair areas no changes noted
SHASM Retaining Pin			
RF-11	2003	VT-3	No Wear Noted
RF-12	2004	VT-3	No wear noted Qty 12 inspected
RF-13	2006	VT-3	No wear noted Qty 12 inspected
RF-14	Jan 2008	VT-3	No Wear noted Qty 12 examined
RF-15	Oct 2009	VT-3	No Wear noted Qty 12 examined
Below Core Plate			

RF-14	Jan. 2008	VT-3	QTY 16 items examined NRI
IGSCC Category "C" DM welds (containing alloy 82/182 weld material)			
RF-14	Jan. 2008	Automated	<p>Completed qualified ASME Section XI, Appendix VIII, Supplement 10 examinations on:</p> <ul style="list-style-type: none"> • Remaining seventeen welds • No Flaws were identified • No overlays were required