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2007-311 BWR Vessel & Internals Project (BWRVIP)

October 23, 2007

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

Attention: John Honcharik

Subject: Project No. 704 – BWR Vessel and Internals Inspection Summaries for Fall 2006 Outages

Enclosed are five (5) copies of the document entitled "BWR Vessel and Internals Project, Vessel Internals Inspection Summaries for Fall 2006 Outages, October 2007."

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. 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 440.346.7124.

Sincerely,

Rick Libra

Rick Libra
Exelon
Chairman, BWR Vessel and Internals Project

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NRR

Addl copies sent to PM

BWR Vessel and Internals Project

Vessel Internals Inspection Summaries for Fall 2006 Outages

October 2007

Table of Contents

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	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	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. 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	UT	UT examinations were performed on welds H5, H6a, H6b, and H7 using phased array. Two 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 new minor indications were discovered in weld H7, one in a previously scanned location and the other in an area not previously scanned.
Shroud Support	1993-1995	VT-1 and UT	VT-1 of welds on 50% of core plate each outage. No indications. UT of Access Hole Covers in 1993. No indications.
	Spring 1997	VT-3	VT-3 on 50% of welds of core plate. No indications.
		VT-1	VT-1 of access hole covers in accordance with GE SIL 462. No indications.
	Fall 1998	VT-3	VT-3 on 50% of welds of core plate. No indications.
		VT-1	VT-1 of access hole covers in accordance with GE SIL 462. No indications.
	Spring 2000	VT-3	VT-3 on 50% of welds of core plate. No indications.
		VT-1	VT-1 of access hole covers in accordance with GE SIL 462. No indications.
	Fall 2001	EVT-1	

		UT/EVT-1	EVT-1: 17% of the H8 and H9 welds. No indications EVT-1: 6 gusset welds. No indications
	Spring 2003	EVT-1	Shroud access hole covers. No relevant indications.
	Spring 2005	UT	Examined welds on 4 gussets.
	Fall 2006	VT	Examined greater than 10% of H9 weld with no indications. EVT-1 performed on approximately 16% of H8 weld length with no relevant indications.
Core Spray Piping	1980's to 1995	VT-1/VT-3	IEB 80-13 exams of piping and welds in annulus. Three indications identified in Fall 1995 outage by EVT-1. No repair required.
	Spring 1997	UT/EVT-1	Reexamined per BWRVIP-18 in Spring 1997 by UT. Only two indications. No repair required. Balance of piping EVT-1.
	Fall 1998	UT	Two indications Re-examined. No repair required. Balance examined by UT.
	Spring 2000	UT	Two indications Re-examined. No repair required.
	Fall 2001	UT/EVT-1	31 of the CS piping welds were UT and 15 of the welds were EVT-1. Significant overlap of examinations. Indications included 1 – P8a weld, 2 – P8b welds, 3 – P9 welds, and 1 – P3 weld spot indication.
	Spring 2003	UT/EVT-1	UT all P8a and P8b welds. Three (3) flaw indications on one P8b weld and one (1) flaw indication on one P8a weld. EVT-1: both junction box covers and

			accessible portion of P-1, 2-P2 welds, 4-P3 welds, 1-P4a weld, 1-P4b weld, 1-P4c weld, 1-P4d weld. EVT-1 all P8a and P8b welds. No additional indications. Note: Results are different from previous outage reports.
	Spring 2005	EVT-1	The top and bottom surfaces of both P1's were examined by EVT-1. The examination revealed that the P1 weld is not a creviced weld. EVT-1 examinations were performed on both P2 welds, the four (4) P3 welds, the 4a – 4d welds at 190 degrees azimuth, and the P5's, P6's, and P7's, the four (4) P8a's, and the four (4) P8b's.
	Fall 2006	EVT-1/UT	Performed UT examinations of P8b welds. Previous indications showed no change in size. Performed EVT-1 examinations of piping welds and bracket attachment welds. No new relevant indications observed.
Core Spray Sparger	1980's to 1995	VT-1/UT	IEB 80-13 of welds on sparger. No indications.
	Spring 1997	EVT-1	Sparger and brackets inspected in accordance with BWRVIP-18. Debris (wire) in C-sparger Nozzle 15C was found. No other indications.
	Fall 1998	EVT-1	Sparger and brackets inspected in accordance with BWRVIP-18. Debris (wire) in C-sparger Nozzle 15C was reconfirmed. No other indications.
	Spring 2000	EVT-1	Sparger and brackets inspected in accordance with BWRVIP-18. Five indications dispositioned as acceptable.
	Fall 2001	EVT-1	All S1, S2, and S4 welds examined with no indications.
		VT-1	All S3a and S3b welds for the C Core

			Spray sparger. No new indications.
		VT-1	One S3c weld on the D sparger. No indications.
	Spring 2003	VT-1	CS Sparger A nozzle welds (S3a & S3b) and all CS sparger bracket welds.
		EVT-1	CS Sparger A S1, S2, and S4 welds. CS Sparger B S1, S2, S4 and circumferential welds.
	Spring 2005	N/A	Sparger examinations deferred to fall 2006 (RE23).
	Fall 2006	EVT-1/VT-1	Sparger welds and brackets performed with no relevant indications.
Top Guide (Rim, ect.)	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 indication on the 90 degree aligner pin keeper was observed and evaluated as acceptable (indication not on load bearing portion of assembly).
	Spring 1997	VT-1	VT-1 re-examination of Top Guide Alignment Pin located at 90-degrees in accordance with SIL 588, R1. Indication on aligner pin keeper did not appear to change in size.
	Spring 2000	VT-1	VT-1 of hold down bolts per BWRVIP-26. No indications.
	Fall 2001	VT-1	Horizontal Aligner Pins with no new indications.
		VT-1	Hold Down Devices. No indications.
		EVT-1	22% of Rim weld with no indications.
	Fall 2006	EVT-1/VT-1/VT-3	VT-1 on two hold down assemblies with no indications. EVT-1 of two aligner pin

			assemblies. A previous indication identified on the non-load bearing keeper of the aligner pin assembly at the 90 degree location was observed with no apparent change. However, two new but similar type indications were also observed on the same keeper. Three new indications were observed on the non-load bearing aligner pin keeper at the 270 degree location. Indications were evaluated as acceptable.
Core Plate (Rim, etc.)	Fall 1995	VT-3	Hold down bolts examined in 1995 per SIL 588. No indications.
	Spring 2000	VT-3*	48 bolts examined from top side. *(Bolts were not accessible for EVT-1)
SLC	1986-2001	VT-2	VT-2 exam of SLC penetration during RPV pressure test each outage.
	2003	EVT-2	Performed during Class 1 pressure test.
	Spring 2005	EVT-2/ UT	Enhanced VT-2 performed in conjunction with ASME Section XI Class I hydrostatic test. Manual UT performed per Risk Informed Category RA (SLC-BJ-1).
	Fall 2006	EVT-2	Enhanced VT-2 performed in conjunction with ASME Section XI Class I hydrostatic test.
Jet Pump Assembly	1986-1995	VT-1, VT-3, UT	Ten (10) Jet Pumps VT examined each outage. Exam includes applicable GE SILS. Jet pump beams replaced in 1985. Jet pump beam UT performed in 1993.
	Spring 1997	VT-1, VT-3	Ten jet pumps VT examined. Exam includes applicable GE SILs. No indications.
	Fall 1998	VT-1, VT-3	Ten jet pumps VT examined. Exam includes applicable GE SILs. No indications.
	Spring 2000	N/A	Exams deferred to Fall 2001.

	Fall 2001	EVT-1, VT-1, VT-3	6 jet pumps with an additional 4 jet pumps with limited exams on the associated risers. No new indications.
		VT-1/3	All 20 jet pumps. No new indications.
	Spring 2003	VT-1 EVT-1 VT-3	JP's 1 through 10 EVT-1 beam transition area and AD-3b welds. VT-3 sensing lines and VT-1 bracket welds. Previous report cracked bracket weld determined not to be flawed.
		EVT-1	JP's 4 and 5 IN-4 weld
		VT-1 EVT-1 VT-3	JP's 11 through 20 EVT-1 beam transition area, RB-1a, RB-1c, RB-2c, RS-1 RS-2, RS-3 RS-6, RS-8, RS-9, In-4, MX-2 DF-1, DF-2, AD-1, AD-2, AD-3a, AD-3b. VT-3 JP sensing lines and VT-3 bracket welds. VT-3 inlet mixer. EVT-1 on all 20 JP BB-3 areas.
		UT	BB-1 & BB-2 all 20 jet pumps. No Indications.
	Spring 2005	EVT-1 VT-3	EVT-1 performed on the AD-1 weld for Jet Pump's (JP) 1, 2, and 5, the AD-2, AD-3a, AD-3b, DF-2, 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. VT-3 performed on the JP inlet nozzle and mixer regions for JP's 1 – 10 per SIL 465. EVT-1 performed on the restrainer bracket adjusting screw tack welds, gaps and supplemental wedges on JP's 2 and 10, and EVT-1 on tack welds and gaps on JP's 15 and 16 per SIL 574.
	Fall 2006	EVT-1	EVT-1 performed on AD-1, AD-2, AD-3a, AD-3b, DF-1, DF-2, RS-1 and RS-2 for Jet Pumps 15, 16, 19, 20. EVT-1 performed on DF-1 for Jet Pumps 17 and 18. No indications observed.
Jet Pump Diffuser	1986-1998	VT-3	10 Jet Pumps VT-3 examined each

			outage. No indications.
	Spring 1997	VT-1, VT-3	Ten jet pumps VT examined. Exam includes applicable GE SILs. No indications.
	Fall 1998	VT-1, VT-3	Ten jet pumps VT examined. Exam includes applicable GE SILs. No indications.
	Spring 2000	N/A	Exams deferred to Fall 2001.
	Fall 2001	EVT-1	10 jet pumps (5 assemblies) with the only new indication being a broken jet pump sensing line upper bracket retaining weld.
	Spring 2003	N/A	
	Spring 2005	N/A	See Jet Pumps.
	Fall 2006	N/A	See Jet Pumps. See Jet Pumps.
CRD Guide Tube	Fall 1995	VT-3	VT-3 exams of accessible guide tubes. No indications.
	Spring 1997	VT-3	VT-3 exams of accessible guide tubes. No indications.
	Fall 1998	VT-3	VT-3 exams of accessible guide tubes. No indications.
	Spring 2000	EVT-1, VT-3	EVT-1 of 4 guide tube welds per BWRVIP-47 and VT-3 exams of 10 guide tubes. No indications. VT-3 of anti-rotation pins at 8 locations per BWRVIP-47.
	Fall 2001	VT-3	Examined 13 anti-rotation pins and alignment lug welds. No indications.
		EVT-1	Examined 5 CRD Guide Tube CRGT-2 & 3 welds. No indications.
	Spring 2003	VT-3	Examined 16 guide tube interior surfaces, anti-rotation pins, and alignment lug welds. No indications.

	Spring 2005	EVT-1	Examined CRD upper guide tube circ weld CRGT-2-(06-19) and lower guide tube circ weld CRGT-3-(06-19).
	Fall 2006	EVT-1/VT-3	VT-3 performed of CRGT and alignment pin at one location. EVT-1 performed on CRD upper guide tube circ weld CRGT-2 and lower guide tube circ weld CRGT-3 at one location. No indications observed.
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. Replaced one dry tube in 2005 (RE22)
Instrument Penetrations	1986-2005	VT-2	VT-2 exams during RPV pressure test each outage.
Vessel ID Brackets	1986-1995	VT-1/VT-3	ASME XI VT-3 exams (VT-1 if in the beltline region) of jet pump riser brace, dryer, FW Sparger, Core Spray, guide rod, and surveillance capsule holder brackets performed once per interval. No indications noted.
	Spring 1997	VT-1/VT-3	10 jet pump riser brackets and welds examined. No indications.
	Fall 1998	VT-1/VT-3	10 jet pump riser brackets and welds examined. No indications.
	Spring 2000	VT-1/VT-3	Guide rod and FW Sparger Brackets and welds examined per BWRVIP-48. No indications
	Fall 2001	VT-3	Examined 3 Surveillance holder upper and lower bracket welds. No indications
	Spring 2003	EVT-1	All FW sparger bracket attachment welds and all dryer support attachment welds. No indications

	Fall 2006	EVT-1	Eight (8) FW sparger bracket attachment welds were examined with no indications.
LPCI Coupling	N/A	N/A	Not applicable to this plant.
Steam Dryer	Fall 2006	VT-1	Performed baseline 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 new indications were observed in a weld adjacent to a drain channel and both tack welds on one lifting lug were observed. The indications were evaluated as acceptable. Note: CNS has not implemented Extended Power Uprate at this time.

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 Shroud – BWRVIP 76	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.
	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.
Shroud Support – BWRVIP 38	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 all access areas of H9 and EVT-1 of 10% of H9 between JP 10 and 11. NRI
Core Spray Piping – BWRVIP 18	10/04 – R18	EVT-1	- Thermal Sleeve to Tee Welds: 1P1, 2P1. NRI.
		EVT-1	- Cover Plate to Tee Box Welds: 1P2, 2P2. NRI.
		EVT-1	- Tee Box to Pipe Welds: 1P3, 2P3, 3P3, 4P3. NRI.
		EVT-1	- Horizontal Pipe to Elbow Weld: 2P4a. NRI.
		EVT-1	- Elbow to Vertical Pipe Weld: 2P4b. NRI.
		EVT-1	- Eight Core Spray Piping brackets, attachment weld, pad surface and HAZ of cladding. NRI.
			- Performed Core Spray Lower Sectional Replacement (all four downcomers) eliminating inspection of the following welds: 1-4P4c, 1-4P4d, 1-4P8a-d, 1-4P5, 1-4P6, P7.
	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	- Thermal Sleeve to Tee Welds: 1P1, 2P1. NRI. - Cover Plate to Tee Box Welds: 1P2, 2P2. NRI. - Tee Box to Pipe Welds: 1P3, 2P3, 3P3,

			4P3. NRI. - Horizontal Pipe to Elbow Weld: 3P4a. NRI. - Elbow to Vertical Pipe Weld: 3P4b. NRI. - Two Core Spray Piping brackets, attachment weld, pad surface and HAZ of cladding. NRI.
Core Spray Sparger – BWRVIP 18	10/04 – R18	VT-1 EVT-1 VT-1	- Nozzle Tack Welds: 3S3 (187-260°), 3S3 (260-003°), 4S3 (187-290°), 4S3 (290-003°). NRI. - Sparger to End Cap Welds: 1S4 (7°), 1S4 (183°), 2S4 (7°), 2S4 (183°), 3S4 (3°), 3S4 (187°), 4S4 (3°), 4S4 (187°). NRI. -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.
Top Guide (Rim, etc.) – BWRVIP 26	10/04 – R18 11/06 – R19	VT-1 EVT-1 EVT-1	- Alignment assemblies at 90° and 180°. NRI. - EVT-1 of rim to bottom plate weld at 90° and 180°. NRI. - Inspected rim weld from cell 03-34. NRI
Jet Pump Beams and Sensing Line Clamps – BWRVIP 41 & 51	10/04 – R18 11/06 – R19	VT-3 EVT-1 VT-1 VT-1	- Examined 17 BWR-4 beam bolt retainer mechanisms (weld-less keeper) to ensure all keepers were engaged. NRI. - Examined 3 BWR-4 welded keeper style beams. BB-1 and BB-2 on Jet Pumps 5, 8, and 13. NRI. - Examined jet pump sensing line clamps on jet pumps 1, 2, 3, 10, 11, 12, 13, & 20. - Replaced beams on JPs 5, 8 and 13 due to age.
Jet Pump Restrainer Gate Wedges and Set Screws – BWRVIP	10/04 – R18	EVT-1	- Examined restrainer gate wedges (WD-1) for gaps and excessive wear. Noted normal movement of wedges 11 & 20

41			with no excessive wear identified. All other wedges NRI.
		EVT-1	- Examined AS-1 on five jet pumps: 8 (Vessel Side, Shroud Side), 9 (VS,SS), 11 (SS), 12 (VS,SS), 20 (VS,SS). A gap of 9 mils was identified on the VS of jet pump 9, no auxiliary wedge was installed because the gap was < 10 mils.
		EVT-1	- Examined AS-2 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. Re-inspections are scheduled for D3R19. Jet pump 11 had a set screw missing from its housing. The set screw was discovered and retrieved from the annulus, and a scissor-type auxiliary wedge was installed to replace the missing set screw. Also discovered during the inspection of jet pump 11was a poor quality tack weld on the swing-gate keeper. A review of historical tape indicates the bolt keeper is in the identical condition as it was in during D3R13. The condition of the bolt keeper was accepted for one cycle. Re-inspection is scheduled for D3R19.
		EVT-1	- 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; follow-up inspections of the set screw and mounting block are scheduled for D3R19. 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 and will be re-inspected during D3R19 to confirm

			there is no change in the condition of the restrainer gate.
	11/06 – R19	VT-1	- Examined aux wedge on JP 11 and WD-1 on JPs 1, 2, 3, 4, and 11 for wedge wear. RI for slight wear on JP 11 aux wedge. Justified continued operation for one cycle. - 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.
Jet Pump Risers – BWRVIP 41	10/04 – R18	EVT-1 EVT-1	- Inspected 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. - Baseline for first six-year inspection cycle is complete.
	11/06 – R19	EVT-1	- Inspected RB-1 & 2 on 5 jet pumps: 1, 2, 3, 4, & 20. NRI - Inspected RS-4 & 5 on three jet pump pairs: 9/10, 11/12, 13/14. NRI - Inspected RS-8 &9 on three jet pump pairs: 1/2, 3/4, 5/6. NRI
Jet Pump Mixer – BWRVIP 41	10/04 – R18	UT	- Examined MX-3a&b on jet pumps: 2, 3, 4, 5, 8, 9, 12, 13, 18, & 19. NRI. - Baseline for first six-year inspection cycle is complete.
	11/06 – R19	EVT-1	- Inspected MX-1 and IN-5 on 10 jet pumps:1, 2, 3, 4, 5, 11, 12, 13, 14, 15. NRI
Jet Pump Diffuser/Adapter – BWRVIP 41	10/04 – R18	UT	- Examined DF-1, -2 & -3 and AD-1, -2 on jet pumps: 2, 3, 4, 5, 8, 9, 12, 13, 18, & 19. NRI. - Baseline for first six-year inspection cycle is complete.
Lower Plenum / Bottom Head Drain	10/04 – R18	VT-3	- Examined eight Stub Tube to Vessel Welds (ST/RPV-1) and eight Stub Tube

Cleaning – Section XI / 2002 BWRVIP INPO Assessment Commitment			to CRD Housing Welds (CRDH/ST-1) in cells: F7, G6, G7, G8, H7, H8, H9, J8. NRI.
		VT-3	- Inspected two locations for Core Plate to Stiffener Plate Stitch welds: G7 & G8 beam welds. NRI.
		VT-3	- Examined two locations for Stiffener Plate to Stiffener Rods welds: G7 and H8 beam tie rods. NRI. - Bottom Head Drain cleaned.
Vessel ID Brackets – BWRVIP 48	10/04 – R18	EVT-1	- Four steam dryer wall support lugs, lug to pad, and pad to vessel attachment welds. NRI.
		VT-1	- Eight feedwater sparger end-bracket lug assemblies. NRI.
		EVT-1	- Eight feedwater sparger lug to vessel attachment welds. NRI.
	11/06 – R19	VT-3	- Inspected the attachment welds for 2 Core Spray piping brackets and all of the 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
Reactor Pressure Vessel – BWRVIP 05	10/04 – R18	UT	- Examined vertical welds SC1B, SC2A, SC2C, SC3A, 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
	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

Steam Dryer – GE BWRVIP-139	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 man way 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 cracking in the outer hood areas. Outer hoods modified to repair cracking.
		Best effort VT-1	- 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	- Installed new dryer. Performed VT-1 inspection of outer hood welds on old dryer where previous indications had been identified and repaired. NRI.
SRM/IRM Dry Tubes	11/06 – R19	VT-1	- Inspected 50% of SRM and IRM dry tubes from 3 sides. Inspection performed to meet SIL 409. NRI
Feedwater Spargers	11/06 – R19	VT-1	- Inspected all of 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

Reactor Internals Inspection History

Plant: **James A. FitzPatrick Nuclear Power Plant**

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 1/2" each (one OD and one ID). Crack like indications were less than 10% of weld length and are within allowables 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.
	Fall 1998 (RO13)	EVT-1	Baseline completed per BWRVIP-07 Guidelines (by EVT-1) for all vertical welds. 100% of beltline shroud welds inspected in RO-13. 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 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.
	Fall 2000 (RO14)	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 are 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.
	Fall 2002 (RO15)	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 RO14; though one additional indication is noted on the ID CCW side of the weld approximately ½" long. This indication may be associated with indications on the opposite side (OD) at the same

			location.
	Fall 2004 (RO16)	EVT-1	Inspected Vertical Welds SV2A, SV8C, SV9A, SV9B and SV9C. No relevant indications noted.
	Fall 2006 (RO17)	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.
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. 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.
	Fall 1998	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 RO13. No relevant indications noted. Examined by EVT-1 the access hole cover at 180 degrees. No relevant indications noted.
	Fall 2000/2002	-	No inspections during RO14 and RO15
	Fall 2004	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.
	Fall 2006	EVT-1	Inspected all ten shroud repair tie-rod systems and corresponding shroud support gusset welds at same locations. No relevant indications were noted. Inspected top portion of horizontal weld H9 at each side of tie-rod locations and between gussets at 180°. No relevant indications were noted.
		VT-1	Inspected the access hole cover at 180°, with no relevant indications noted.
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.
	Fall 1998	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 recordable indications noted.
	Fall 2000	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.
	Fall 2002	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. Re-inspected the indication noted in RO14 on weld CSB-12. Level IIIs assessment is that the indication is now believed to be a scratch.
	Fall 2004	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.
	Fall 2006	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.
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 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 dispositioned as acceptable.
	Fall 1998	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.
	Fall 2000	-	No inspections during RO14
	Fall 2002	EVT-1	Re-inspected all T-box and end caps to 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.
	Fall 2004	VT-1	Re-inspected all sparger bracket support welds at "C" and "D". No relevant indications noted.
	Fall 2006	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.
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.
	Fall 1998	N/A	No inspections during RO13
	Fall 2000	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 indications were noted.
	Fall 2002 and 2004	N/A	No inspections in RO15 and RO16.
	Fall 2006	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.
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.
	Fall 1998	VT-3	Inspected 100% of hold down bolting. No relevant indications noted.
	Fall 2000	VT-3	Inspected core plate plugs at 5 core locations. No relevant indications noted.
	Fall 2002	-	No inspections during RO15
	Fall 2004	VT-3	Inspected a total of 6 core plate plugs (at two locations). No relevant indications noted.
	Fall 2006	VT-3	Inspected core plate plugs and the surrounding core plate surface at four LPRM locations. No relevant indications noted.
SLC	Fall 2000	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".

	Fall 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".
	Fall 2006	PT	Performed liquid penetrant examination on SLC nozzle-to-safe end weld per BWRVIP-27 Guidelines with no recordable indications noted.
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.
	Fall 1998	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.
	Fall 2000	-	No inspections during RO14
	Fall 2002	EVT-1, VT-1, and	Completed inspection of Jet Pumps 5 and 6, and portions of Jet Pumps 19 and 20,

		VT-3	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 (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.
	Fall 2004	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.
	Fall 2006	UT	Inspected all twenty jet pump beams with no relevant indications recorded.
			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 for one operating cycle.
		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

			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, 03/04, 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.
Jet Pump Diffuser	1992 and 94	VT-3	See above.
	Fall 1998	MVT-1	See Jet Pump Assembly (above).
	Fall 2000	-	No inspections during RO14
	Fall 2002/2004	EVT-1/VT-1	See Jet Pump Assembly (above)
	Fall 2006	UT/EVT-1	See Jet Pump Assembly (above)
CRD Guide Tube	1992	VT-3	Inspected stub tube to vessel and stub tube to housing welds for 9 tubes. No relevant indications.
	Fall 1998	N/A	No inspections during RO13.
	Fall 2000	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.
	Fall 2002	EVT-1 and VT-3	Inspected accessible surfaces at 4 Guide Tubes per BWRVIP-47 Guidelines. No relevant indications noted.
	Fall 2004	N/A	No inspections in RO16.
	Fall 2006	EVT-1 and VT-3	Inspected accessible surfaces at three Guide Tubes. No relevant indications noted.
CRD Stub Tube	1992	VT-3	See above.

	Fall 1998	N/A	No inspections during RO-13.
	Fall 2000/2002/ /2004/2006	N/A	No inspection requirements per BWRVIP-47 Guidelines.
In-Core Housing	1992	VT-1	No relevant indications.
	Fall 1998	N/A	No inspections during RO-13.
	Fall 2000 thru 2006	N/A	No inspection requirements per BWRVIP-47 Guidelines.
Dry Tube	1994	VT-1	No indications. Replaced all dry tubes in 1987/88.
	Fall 1998	N/A	No inspections during RO-13.
	Fall 2000	VT-1	Inspected 4 IRM/SRM In Core Dry Tubes per GE SIL-409 and GE RICSIL-073 Guidelines. No relevant indications noted.
	Fall 2002	VT-1	Re-inspected SRM Core Dry Tube 20-17 per GE SIL 409 and GE RICSIL-073 Guidelines. No relevant indications noted
	Fall 2004	N/A	No inspections in RO16.
	Fall 2006	VT-1	Inspected dry tubes at three locations with no relevant indications noted.
Instrument Penetrations	1992	VT-1	Two inspected in 1992. No relevant indications noted.
	Fall 1998	N/A	No inspections in RO13.
	Fall 2000	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".
	Fall 2002/ 2004/2006	VT-2	Performed a VT-2 leakage test at 6 instrument nozzles (same as in RO14-Fall 2000). 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.
	Fall 1998	MVT-1	Inspected Core Spray Brackets and Jet Pump Riser Brace Attachments per BWRVIP-48 requirements. No relevant indications noted.
	Fall 2000	-	No inspections in RO14
	Fall 2002	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.
	Fall 2004	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.
			Inspected guide rod and bracket to RPV weld at 180°, with no relevant indications noted.
	Fall 2006	EVT-1	Inspected all core spray piping support bracket welds to RPV wall, with no recordable indications noted.
			Inspected shroud support gusset plate

			welds to RPV wall at ten locations, with no relevant indications noted. Inspected riser brace leaf welds to RPV wall at JP #01/02, 03/04, 17/18 & 19/20, with no recordable indications noted. 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.
LPCI Coupling	N/A	N/A	Not applicable to this plant.
Fuel Support Castings	Fall 1998	VT-3	Inspected accessible areas at fuel support castings during in-process control rod blade change-out. No relevant indications noted.
	Fall 2000	VT-3	Inspected accessible areas at fuel support castings during in-process control rod blade change-out. No relevant indications noted.
	Fall 2002	VT-3	Inspected accessible areas at four fuel support castings during in-process control rod blade change-out. No relevant indications noted.
	Fall 2004	VT-3	No inspections in RO16
	Fall 2006	VT-3	Inspected accessible areas at fuel support castings at four locations. No relevant indications noted.
CRD Nozzle NIR	Fall 1998	VT-1	The Control Rod Drive Nozzle Inner Radius was examined. No relevant indications noted.
	Fall 2000	EVT-1	Examined the CRD Nozzle Inner Radius, including adjacent vessel wall area. No relevant indications noted.

	Fall 2002, 2004 & 2006	N/A	No inspections in R15, R16 and R17.
Steam Dryer Moisture Separator	Fall 1998	VT-3	Inspected 25% of shroud head bolts at storage pit. No relevant indications noted.
	Fall 2000	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 (RO14),with no discernable changes from previous inspection.
	Fall 2004	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 dispositions by calculations. Plans are to re-inspect the indications in RO17. 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.
	Fall 2006	VT-1	Inspected selected welds on the 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 grind out and repaired in R17. Inspected previous relevant indications

			noted in R16 (i.e., at eight vibration block welds and at weld adjacent to drain channel weld #8) with no observed change noted since R16. The linear indication length at one vibration block was re-configured from the previous R16 reporting.
Surveillance Capsule Specimen Holder	Fall 2000	VT-1 and VT-3	Inspected at one location, the upper and lower mounting bracket (VT-1) and the condition of the specimen holder (VT-3) No relevant indications noted.
	Fall 2006	VT-1	Inspected upper and lower mounting bracket welds at 030° and 120°. No recordable indications noted.
Lower Plenum	Fall 2000	VT-3	Inspected by VT-3 accessible areas of lower plenum per BWRVIP-47 Guidelines. No relevant indications noted. Inspected by VT-1 accessible areas of bottom head drain. After removal of debris the area was re-examined and found acceptable.
		VT-1	
	Fall 2002, 2004 & 2006		No access
Feedwater Sparger	Fall 2002	VT-3	Inspected Sparger pipe assembly at 45, 135, 225 and 315 degrees azimuth, 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 azimuth. No relevant indications noted.
		UT	Inspected the NIR at all 4-locations. No relevant indications noted.
	Fall 2004 & 2006	-	No inspections performed

Reactor Internals Inspection History

Plant: **Oyster Creek Generating Station**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Result, Repairs, Replacements, Reinspections
Steam Dryer	Fall 2006	Visual	Re-inspect Steam Dryer Indications identified during previous outages. EVT-1 cracks in hold-down area from 1R19. VT-1 all 4 lifting lugs and EVT-1 indications on 135 deg. lug. BWRVIP-139 required inspections (top side) completed. New fatigue indications were identified that required repair. Dryer repair project completed with 2 areas stop drilled and one crack in center baffle plate was cut out.
Core Shroud	Fall 2006	EVT-1	V-9 inspection of ID and OD. Two horizontal indications (transverse to the weld) were found adjacent to vertical weld on the ID surface. The indications were 2.75 and 1 inch in length and 30 and 35 inches above horizontal weld H5. A technical evaluation was completed to use-as-is. VT-3 Tie-Rods at 170 deg, 220 deg and 310 deg. No findings. VT-1 of Upper Bracket to Shroud Ledge interface on all 10 Tie Rods. No findings.
	Fall 2004	None	No Examinations Required.
	Fall 2002	None	No Examinations Required.
	Fall 2000	EVT-1	V-3, V-4, V-15 and V-16. This was a one sided exam from the OD. No findings.

	Fall 1998	UT EVT-1	V-7, V-8, V-10 and V-12. V-11 I.D. Seven tie-rod assemblies baseline inspected. V-10 exhibited minor OD cracking away from the heat-affected zone. This cracking is believed to be associated with handling lugs that were welded during construction and removed after installation. All other inspected vertical welds were found free of indications. With the inspections performed in 16R and 17R, all accessible vertical welds in the shroud core region are complete. The following vertical welds could not be located. V-3, V-4, V-15 and V-16.
	Fall 1996	Visual	Inspected per BWRVIP-07. Three of ten tie rods inspected, no change from installation. EVT-1, OD of V-9 and V-11, (120" total). V-9 exhibited 3 small axial cracks in HAZ on the OD totaling 1.75". The ID of V-9 was free of axial cracks. A number of small transverse cracks were found on the OD and ID of V-9. V-11 was free of any indications. Analysis showed structural margin maintained.
	Fall 1994	Ultrasonic and visual	Inspected per BWRVIP-01 and 03. Cracks were detected in the Shroud welds H2, H4, H6A, and H6B. Lack of fusion was detected in H3 weld and visual cracks on the ID surface. The Tie Rod modification was installed. Base line visual performed of the tie rods.
Shroud Support	Fall 2006	Visual	EVT-1 of 7 Lug / Clevis pin assemblies - #1, #18, #19, #23, #24, #32 and #33.
	Fall 2004	None	No examinations required.
	Fall 2002	UT	30% UT of H-9 from the OD (Drywell).

			UT inspected H-9 weld in Nozzle N1A, N1C and N1E bioshield openings. Found one 4" long indication in the N1E nozzle area. This "service induced" indication is in the bottom side of the H9 weld and does not penetrate into the base metal of the RPV.
	Fall 2000	Visual	25% of H-9, cleaning performed and EVT-1 inspection completed. This completes 100% inspection of the H-9 weld. No findings.
	Fall 1998	Visual	25% of H-9, cleaning performed and enhanced VT-1, no findings
	Fall 1996	Visual	25% of H-9, (different area then the 1994 inspection), cleaning performed and enhanced VT-1, no findings.
	Fall 1994	Visual	25% of H-9 cleaning performed and enchanted VT-1, no findings.
Core Spray Piping	Fall 2006	Visual	EVT-1 of annulus piping fillet welds (all 10). No findings. EVT-1 of 25% shroud attachment welds - Pipe Bracket PB 103.5 deg. No findings. EVT-1 of 25% sample butt welds: P4bA, P4cA, P2A, P4g/aA, P4g/bA, P4hA, P4iC, P4g/aC, P4g/bC, P4hC, P4bB, P4eB, P4fB, P4gB and P4hB. No findings.
	Fall 2004	Visual	Accessible portions of the annulus piping welds were cleaned using a nylon brush and visual inspections performed utilizing the EVT-1 technique. All accessible portions of the following piping welds were visually inspected: L-3, L-3A, L-4, L-20A, L-13A, L-5, L-7, L-8, L-10, L-11, and L-12 U-3, U-3A, U-4, U-15A, U-24A, U-7, U-8, U-9, U-10, U-11, U-12, U-16, and U-17

			100% of annulus pipe brackets at 15°, 105° 195° and 285°. No findings.
	Fall 2002	Visual	EVT-1 of all creviced welds in the annulus piping = U3, U3A, U4, U15A + U24A; L3, L3A, L4, L13A + L20A. EVT-1 of a 25% sample (11 welds) of the butt welds (non-creviced) not inspected in 17R or 18R: U1,U15,U17,U18,U19,U20 L1,L9,L13,L16,L20 Inspect 100% of annulus pipe brackets (15°, 105°, 195° and 285°) No Findings.
	Fall 2000	Visual	Accessible portions of the annulus piping welds were cleaned using a nylon brush and visual inspections performed utilizing the EVT-1 technique. All accessible portions of the following piping welds were visually inspected: L3, L3A, L4, L6, L13A, L14, L15 and L20A U3, U3A, U4, U7, U8 and U15A 100% of annulus pipe brackets 15°, 105° 195° and 285°. No findings.
	Fall 1998	Visual	All creviced welds in the annulus piping; sample (25%) of the non-creviced welds in the annulus piping: L2, L9, L10, L11, L12, L13, L17, L18, L19 and L20 U2, U5, U6, U13, U14, U15, U21, U22, U23 and U24 Sample (25%) of pipe brackets 285°, 195°
	Fall 1996	Visual	Inspected per BWRVIP- 03. Cleaning of all accessible weld/HAZ surface and performed enhanced VT-1. No findings.
	Fall 1994	Visual and air test	Inspected VT-1, (1 mil wire). No change to pinhole weld defect detected in slip

			joint in 1992. Note: Pinhole weld defect detected in 1992 in System I. Analysis showed structural margin maintained.
Core Spray Sparger	Fall 2006	Visual	EVT-1 Sparger Pipe End Cap welds S4C - 60 deg., S4C - 240 deg., S4D - 60 deg., and S4D - 240 deg. No findings. EVT-1 "T" box cover plate welds - S1C, S2C (LH), S2C (RH), S1D, S2D (LH) and S2D (RH). No findings. VT-1 spray nozzles - S3a, S3b, S3c-B. No findings. VT-1 of 50% of the sparger bracket welds – SB – 026, 091, 120, 179, 240, 300, and 359 deg. No findings.
	Fall 2004	Visual	Inspected all sparger repair clamps. No findings. Inspected end cap welds S4A-60, S4A-240, S4B-60, and S4B-240. No findings. Inspected sparger brackets SB-055, 065, 150, 208, 235, 271 and 330. No findings
	Fall 2002	Visual and Air Test	VT-1 all spargers, nozzles, end cap welds and repair clamps. No findings. No new leaks were identified during the Air Test.
	Fall 2000	Visual and Air Test	All sparger end cap welds were cleaned and EVT-1 inspected. No findings. VT-1 of spargers, repair clamps, and nozzles. No findings. No new leaks were identified during the Air Test.
	Fall 1998	Visual and Air Test	All sparger repair clamps, both spargers.
	Fall 1996	Visual and air test	Inspected per BWRVIP-03. Cleaned end cap welds and performed enhanced VT-1. No findings. Tee box welds are clamped and not accessible to clean or visual. Performed VT-1, (1 mil wire), of

			sparger piping and nozzles. No findings.
	Fall 1994	Visual and Air Test	Performed VT-1, (1 mil wire) of sparger piping and nozzles. No findings.
	1978 - 1980	Visual	(2) Cracks in sparger piping. Repair clamps installed. Note: Cracking found in sparger in 1978; repaired with clamps. Sparger has been inspected and air tested every outage since then; report submitted to NRC for approval for restart every outage.
Top Guide	Fall 2006	Visual	EVT-1 of selected known flaws in grid beams: #4, VT-3 and VT-6. One area showed no growth, while the other two had grown between 0.25" and 0.75" from the 2002 outage to the 2006 outage. A flaw evaluation was performed to use-as-is.
	Fall 2004	Visual	VT-1 of top guide hold down bolts at 303 and 123 degrees. No findings. EVT-1 of VT-6 crack showed no measurable growth. Could not visually locate two other existing UT indications.
	Fall 2002	Visual	EVT-1 of two existing cracks measured in 18R outage (#3 and #5). No change to crack length identified.
	Fall 2000	Visual	Top guide hold down bolt assembly VT-3 at 33° and 213°. Top guide beam to rim fillet welds VT-1 at 33° and 213°. No findings. VT-1 of two existing cracks (#3 and #5) with cleaning. Both cracks measured on both sides. Crack #5 showed approx. 1" growth. Crack #3 showed no measurable growth.
	Fall 1998	None.	Not required for this outage by analysis.
	Fall 1996	Ultrasonic	12 indications emanating from notches

		100% grid beams	detected at intersections of cross members. 5 of the 6 cracks on bottom side of member at mid span detected. Removed sample from beam with crack to investigate root case.
	Fall 1994	Visual	[Under side of Top Guide] Three additional vertical cracks were detected at mid span locations. Disposition use as is.
	Fall 1992	Visual	[Under side of Top Guide] Two additional vertical cracks were detected at mid span location. Disposition use as is.
	Fall 1991	Visual	[Under side of Top Guide] A vertical crack was detected at mid span location. Disposition use as is.
Core Plate	Fall 2006	None	No exams were required.
	Fall 2004	Visual	No wedge inspections required. Inspected in-core guide tube plugs 04-29, 20-37, and 12-21. No findings.
	Fall 2002	Visual	No inspections needed. Wedges replace hold down bolt inspections.
	Fall 2000	Visual	Visually inspected all 8 wedges to verify integrity after first cycle of operation. All wedges found as installed.
	Fall 1998		Wedges installed. No further exams of core plate were performed.
	Fall 1996	Visual	Inspected top portion only of 18 hold down bolt that were not inspected in fall 1994 and top periphery section at bolt locations. No findings.
	Fall 1994	Visual	Inspected 18 hold down bolt tops only and top periphery at bolt locations inspected. No findings.
Jet Pump Assembly	NA	NA	NA

Jet Pump Diffuser	NA	NA	NA
SLC	Fall 2006	UT	PDI - UT the Liquid Poison Nozzle N12 / SE. No findings.
	Fall 2004	VT-2 pressure test	Inspected insulated nozzle from drywell. No leakage observed.
	Fall 2002	Visual / PT	PT of Liquid Poison Nozzle – No Indications. Inspect insulated nozzle from drywell during RPV pressure test. No leakage observed.
	Fall 2000	VT-2 pressure test	Inspected insulated nozzle from drywell. No leakage observed.
	Fall 1998	VT-2 during Code pressure test.	Not made accessible for direct exam.
	Fall 1996	No Inspection Performed.	Not made accessible.
	Fall 1994	No Inspection Performed	Not made accessible.
CRD Guide Tube	Fall 2006	EVT-1, VT-3	Inspected 4 guide tubes. No findings.
	Fall 2004	EVT-1, VT-3	Inspected 4 guide tubes. No Findings.
	Fall 2002	EVT-1, VT-3	Inspect 1 guide tube (46-43) removed to support stub tube inspection. No findings.
	Fall 2000	VT-1, VT-3	2 guide tubes. No findings.
	Fall 1998	VT-3	15, no findings.

	Fall 1996	No inspection Performed.	Not made accessible.
	Fall 1994	No Inspection Performed	Not made accessible.
CRD Stub Tube	Fall 2006	None.	No inspections required.
	Fall 2004	None	No inspections required.
	Fall 2002	VT-1	Visual Inspection of 2 stub tubes found leaking at bottom head in Fall 2000 (42-43 and 46-39). No indications noted.
	Fall 2000	VT-1 VT-2 pressure test	None made accessible. 2 stub tubes found leaking at bottom head (42-43 and 46-39). Performed UT of CRD housing to stub tube welds (J weld) and area of housing to be rolled. No indications. Roll repaired both leaking housings.
	Fall 1998 Fall 1996	No inspection Performed.	Not made accessible.
	Fall 1994	No Inspection Performed	Not made accessible.
In-Core Housing	Fall 2006	No inspection performed.	Not made accessible.
	Fall 2004	No inspection performed.	Not made accessible.
	Fall 2002	No inspection performed.	Not made accessible.
	Fall 2000 Fall 1998	No inspection	Not made accessible.

	Fall 1996 Fall 1994	performed.	
Dry Tube	Fall 2006	Replacement	Replaced 4 Dry tubes due to service life: IRM-11, 17, 18 and SRM-24.
	Fall 2004	Visual	VT-1 of SRM 24 found tube not fully engaged in top guide. VT-1 of IRM 17 and IRM 18 found both tubes bowed.
	Fall 2002	Visual	No inspections required.
	Fall 2000	Visual	VT-1 five dry tubes. One found slightly bent – use as is. No findings on others.
	Fall 1998	Visual	VT-1 one dry tube, no findings
	Fall 1996	Visual	VT-1 one dry tube, no findings.
	Fall 1994	Visual	VT-1 four dry tubes, no findings.
Instrument Penetrations	Fall 2006 Fall 2004 Fall 2002 Fall 2000 Fall 1998 Fall 1996 Fall 1994	Visual	VT-2 exam from vessel exterior. No findings.
Vessel ID Brackets	Fall 2006	EVT-1	EVT-1 both Guide Rod Brackets. EVT-1 all 3 Surv. Spec. Brackets. No findings.
	Fall 2004	EVT-1	Inspected all 4 dryer support brackets. No findings.
	Fall 2002	EVT-1	All feedwater sparger attachment brackets. Both guide rod attachment brackets. All surveillance sample brackets (30, 210 and 300 degree locations) No indications on attachment welds.
	Fall 2000	EVT-1	All 4 dryer support brackets. Observed wear indications on brackets. No indications on attachment welds. All feedwater attachment brackets

			inspected. No indications on attachment welds. Cracks observed on feedwater sparger to end bracket welds (non-safety-related component) on 2 ends.
	Fall 1998 Fall 1996 Fall 1994	VT-1	VT-1 of accessible portions of weld on guide rod brackets, steam dryer brackets, surveillance sample brackets. All attachment welds; no findings.
LPCI Coupling	NA	NA	NA
Fuel Support Casting	Fall 2006	Visual	None inspected.
	Fall 2004	Visual	None inspected.
	Fall 2002	Visual	None inspected.
	Fall 2000	Visual	VT-3 (2) support casting. No findings.
	Fall 1998	Visual	VT-3 (24) support castings. No findings.
	Fall 1996	Visual	VT-3 (25) support castings. No findings.
	Fall 1994	Visual	VT-3 (17) support castings. No findings.

Note: All indications left "as is" were analyzed and structural margins were acceptable for continued service.

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	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 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-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 scheduled per BWRVIP-76.

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.
	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
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.
	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.
	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.
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.
		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.
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.
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.
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.
	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.
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.
	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.
		UT	UT performed on all twenty (20) hold down beams (3 zones, BB-1, BB-2, and BB-3). No indications identified.
		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.
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
	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.
CRD Guide Tube	1992	VT-3	VT-3 examination of housings accessible from fuel cells 26-31 and 30-27. No indications identified.
	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. No other indications identified.
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			All Dry Tubes replaced in 1984

	1994	VT-1	VT-1 examination of IRM Dry Tube 2D, at core location 37-32.
	1997	N/A	All IRM and SRM tubes replaced w/ Wide Range Monitoring tubes in 1997. No inspections required.
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.
	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.
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.
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.