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BWRVIP BWR Vessel & Internals Project 2004-054

February 6, 2004

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

Attention: Meena Khanna

Subject: Project No. 704 – BWR Vessel and Internals Inspection Summaries for Spring 2002 and Fall 2002 Outages

Enclosed are ten (10) copies of each of the following documents:

1. "BWR Vessel and Internals Project, Vessel Internals Inspection Summaries for Spring 2002 Outages, January 2004"
2. "BWR Vessel and Internals Project, Vessel Internals Inspection Summaries for Fall 2002 Outages, January 2004"

The information provided in the enclosed documents 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 documents are being provided to the NRC for information only.

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

Representatives of the BWRVIP would be pleased to meet with the NRC staff to discuss any comments or questions related to the enclosed documents. If you have any questions on the enclosed documents or the general subject of inspection results, please call Robin Dyle, BWRVIP Integration Committee Technical Chairman, Southern Nuclear Company, at 205.992.5885.

Sincerely,

William A Eaton

William A. Eaton
Entergy Operations, Inc.
Chairman, BWR Vessel and Internals Project

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BWR Vessel and Internals Project

Vessel Internals Inspection Summaries for Spring 2002 Outages

January 2004

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Reactor Internals Inspection History

Plant: **Brunswick Unit 1**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	1993	EVT-1 and UT	EVT-1 baseline. Indications in several circumferential welds and ring segment welds. No indications on vertical welds. UT selected areas on H1 and H5. Installed clamp repair on H2/H3. Full structural margins on non-repaired welds.
	1995	UT	Reinspected H1 & H5 with no indication growth. 2 repair brackets inspected with no indications.
	1996	UT	Reinspected H1 and H5 with no indication growth. UT baseline of H4, H6A, H6B and H7. No indications on H7. Minor indications on H4, H6A and H6B with no impact to structural margins. VT-1 and VT-3 inspected 3 repair brackets with no indications.
	1998	VT-1/VT-3	No inspections of welds was performed. Inspected 7 of 12 total shroud clamps with no indications. This completed the initial inspection of all 12 clamps installed in 1993.
	2000	UT/EVT-1/ VT-1/VT-3	Re-inspected H1 and H5 (UT) with no indication growth. Re-inspected (EVT-1) OD side of V1 and V2 with no indications. VT-1 and VT-3 inspected 3 repair brackets with no indications.
	2002	VT-1/VT-3	No shroud weld inspections were performed. Inspected 4 of 12 total shroud repair clamps with no indications noted.
Shroud Support	1993	VT	VT of accessible areas on H8, H9, and access hole covers with no indications.

	1995	UT	UT baseline of H9 and VT reinspection of portions of H8 with no indications noted. VT-1 inspection of shroud support Access Hole Covers with no indications noted.
	1996	EVT-1	EVT-1 examination of Access Hole Covers with no indications noted.
	1998	EVT-1	Inspected Access Hole covers with no indications noted
	2002	EVT-1	Inspected both Access Hole Cover welds with no indications noted. Visually inspected approximately 18% of top side of H8 with no indications noted
Core Spray Piping	1980's to Present	MVT-1 and EVT-1	IEB 80-13 of piping and welds in annulus. One indication on the header piping. Full structural margins. Inspected per BWRVIP-18 in Spring 1996 with no new indications.
	1998	EVT-1	Performed re-inspection of Core Spray piping and spargers per BWRVIP-18. No new cracking noted. Previous cracking had no significant length changes.
	2000	EVT-1	Performed re-inspection of Core Spray piping and spargers per BWRVIP-18. No new cracking noted. Previous cracking had no significant length changes.
	2002	EVT-1	Inspected 100% of the Core Spray piping creviced welds and 25% of the elbow welds per BWRVIP-18. No new cracking noted. Reinspection of a previously identified crack showed some small increase in length.
Core Spray Sparger	1980's to Present	MVT-1, EVT-1, and VT-3	IEB 80-13 of welds on piping and spargers. One indication on sparger T-Box. Inspected per BWRVIP-18 in Fall, 1996 with no growth in old indication and no new indications.

	1998	MVT-1, EVT-1, and VT-3	Re-inspected per BWRVIP-18 with no new indications. Previously identified crack had no significant length changes.
	2000	MVT-1, EVT-1, and VT-3	Re-inspected per BWRVIP-18 with no new indications. Previously identified crack had no significant length changes.
	2002	EVT-1, VT-1	Inspected sparger tee welds, sparger drain welds, sparger end cap welds and 25% of the sparger nozzle welds and support brackets in accordance with BWRVIP-18. No new indications were reported and no change was noted in a previously reported indication.
Top Guide (Rim, etc.)	1993-96	VT-1	VT-1 of 14 cells in 1993; no indications. 1996 reinspected with no indications. VT-3 of wedges, holddown clamps, eccentric aligners, and general surface areas in 1993. One minor indication on eccentric aligner & dowel pin hole.
	2000	VT-1	VT-1 of 2 Hold Down assemblies with no indications noted.
Core Plate (Rim, etc.)	1993	VT-1	Holddown bolts from topside and partial surface areas. No indications.
SLC	1988	LP	No examinations performed on internal piping. Section XI LP performed on nozzle to safe end welds. No indications.
	2000	LP	Section XI LP performed on nozzle to safe end weld. No indications noted.
Jet Pump Assembly	1993-96	VT-1	Riser brace brackets done once per period. Wedges, set screws, tack welds, sensing lines and sensing line supports VT per various SILs. Jet pump beams replaced in Fall, 1993. No indications noted, as well as in old jet pump beams. Transition areas inspected in 1995 with no indications.
	1998	EVT-1	Inspected all RS-1, RS-2 and RS3 welds

			and associated draw beads. Cracks found on 3 risers with lengths ranging from 1-1/8" to 5-3/4". Analysis concluded structural margin acceptable for one cycle of operation. Inspected all 10 TS-3 welds (safe end transition piece to safe end extension) with no indications.
	2000	EVT-1	Inspected previously identified cracking on 3 RS-1 welds with no change in cracking.
	2002	EVT-1	Inspected 100% of hold-down beams, 25% of the IN-4 welds, 20% of the MX-2 welds, 20% of the WD-1 areas, 30% of the riser brace welds and re-examined the previously identified indications on the RS-1 welds of risers "D", "G" and "K". No new indications were noted and no significant changes were noted in the previously identified indications.
Jet Pump Diffuser	start-up to present	VT-3	Adapter and diffuser welds inspected once per period. Last inspected in 1995 with no indications.
	1998	MVT-1	Inspected 20 of 40 DF-1 and DF-2 welds with no indications.
	2000	EVT-1	Inspected 10 AD-1 and AD-2 welds with no indications.
CRD Guide Tube	1993	VT-3	Inspected accessible surfaces of approximately 75% of total population with no indications.
	2002	VT-1, VT-3	Inspected the CRGT-1, -2, -3 and FS/GT-ARPIN-1 components on seven guide tubes. No indications noted.
CRD Stub Tube	1993	VT-3	Inspected accessible surfaces of approximately 75% of total population with no indications.
In-Core Housing	Fall, 1993	VT	No indications noted.
Dry Tube	Fall, 1993	VT	No indications. Replaced in 1988. Scheduled for inspection in 2008.

Instrument Penetrations	1988 and 1995	LP	Inspections of external piping performed once per interval in accordance with ASME Section XI. No indications .
Vessel ID Brackets	1993-1996	VT-1 in beltline area; VT-3 other areas	Section XI inspections of core spray, feedwater sparger, dryer and surveillance capsule holder brackets performed once per interval. Last inspection Fall, 1996. No indications.
	2002	EVT-1/VT-1	Inspected 6 of 20 jet pump brace arm pad to RPV welds and 4 of 8 core spray header bracket to RPV welds. No indications were noted.
LPCI Coupling	NA	NA	Not applicable to Brunswick.

CLINTON POWER STATION Unit 1
Reactor Internals Inspection

The following inspections were performed during C1R08 (April, 2002)

BWRVIP Document/ Component Scope	Inspection Methods Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
VIP-41 Jet Pumps A,B,C,J, and K— RS-1 Welds	EVT-1	The examination coverage for these welds was 45% only. No indication was identified.
VIP-42 LPCI "C" Coupling— 6-1a, 6-1b, 6-1c, 6-6-1d, 6-4, 6-5a, and 6-5b welds	EVT-1	The examination coverage was: 6-1a – 95%, 6-1b – 60%, 6-1c – 60%, 6-1d – 60%, 6-4 – 80%, 6-5a – 80%, and 6-5b – 80%. No indication was identified.
VIP-47 Lower Plenum/ CRD Guide Tubes 12-21, 12-37, 16-17, 16-41, 20-25, 20-45, 28-21, 28-29, 28-37, 36-13, 36-29, 36-33, 36-45, 40-17, 40-41, 44-21, and 44-37 CRGT-1, CRGT-2, CRGT-3, and FS/GT-ARPIN-1 Welds	CRGT-1---VT-3 CRGT-2---EVT-1 CRGT-3---EVT-1 And FS/GT-ARPIN-1---VT-3.	The examination coverage for: All CRGT-1 welds was 50%. All CRGT-2 welds was 100% except on 40-17 and 40-41 CRDs. All CRGT-3 welds was 100%. All FS/GT-ARPIN-1 was 100%. No indication was identified.
VIP-48 Feedwater Spargers and End Brackets	VT-3/ EVT-1	No indication was identified.
VIP-49 Instrument Penetrations	VT-2	No Leakage identified.
VIP-76 Core Shroud— H3, H4, H6a & H7 Welds	UT	Cracking was identified on H3 and H4 welds which required Clinton to expand the sample and examine all horizontal welds and certain vertical welds (V11, V12, V13, and V14). Cracking was detected in H5 weld.

		Crack Growth analysis was performed to demonstrate the structural integrity of the Core Shroud for continued operation for one (1) cycle.
Dry Tube – Only 4 IRMs (22-27, 30-35, 30-27, and 22-35)	VT-3	No indication was identified.
Steam Dryer – Previous Crack and Tie bars	VT-3	No change noted in previous indication. No indication was identified on Tie bars.

Reactor Internals Inspection History

Plant: **Hatch Unit 1**

Components in Scope (Guidelines/ Implementation Date)	Date/Outage	Inspection Method	Summarize the Following Information: Inspection Results, Repairs, Replacements, Frequency
Core Shroud Horizontal Welds	Spring 1992 / 1R14	UT/EVT-1	UT of horizontal welds found cracking – acceptable.
	Fall 1994 / 1R15	N/A	4-Tie Rods repair installed Fall 1994/1R15. No examination of horizontal welds H-1 through H-8 required.
Core Shroud Tie Rods (BWRVIP-07, 1996)	Fall 1994 / 1R15	Tightness, EVT-1/ VT-3	Installed 4-Tie Rods. Satisfactory.
	Spring 1996 / 1R16	Tightness, EVT-1/ VT-3	Increased torque to all 4 Tie Rods. 1 at 315° found to be less than desirable load and was corrected. All others acceptable.
	Fall 1997 / 1R17	Tightness, EVT-1/ VT-3	Tightness checks to all 4 Tie Rods. 1 at 315° was again found to be less than desirable load and was corrected. All others acceptable.
	Spring 1999 / 1R18	Tightness, EVT-1/ VT-3	Tightness check of 315° was found to be less than desirable, but acceptable. Tie Rod Nut Retainer slots bending from torque but acceptable, tightness procedure to be revised.
Core Shroud Vertical Welds (BWRVIP-07, 1996) (BWRVIP-63, 2000)	Fall 1994 / 1R15	EVT-1	EVT-1, 6" ID & OD at Horizontal Weld Intersection of H-4 & H-5. V-3, V-4,V-5, & V-6. Acceptable indications found on ID of V-4, and OD of V-5.
	Spring 1996 / 1R16	EVT-1	Baseline per BWRVIP-07 in 1996. EVT-1 Outside Surface of V-1 thru V-11, & Inside Surface of V-5 & V-6. Acceptable Indications in V-5, V-6.
	Fall 1997 / 1R17	UT	UT of 6 verticals in 1997, indications in V-5 & V-6, acceptable.

	Spring 1999 / 1R18	EVT-1	EVT-1, V-1 & V-2 from OD due to access. And V-3 through V-8 from ID & OD. Indications reported on V-4, V-5, V-6, & V-8. Acceptable. Future examinations to be determined.
	Spring 2002/1R20	EVT-1	EVT-1, V-1, V-2, V-9, V-10, & V-11 from OD. No Reportables. Schedule not to exceed 6 years
Core Shroud Ring Segment Welds (BWRVIP-07, 1996) (BWRVIP-63, 2000)	Spring 1996 / 1R16	EVT-1	EVT-1 from outside surface of 2 Ring welds. Satisfactory.
	Fall 1997 / 1R17	EVT-1	EVT-1 from outside surface of 4 Ring welds. 1- acceptable indication.
	Spring 1999 / 1R18	EVT-1	EVT-1 from outside surface of 5 Ring welds. No indications. Previous indication determined to be non-relevant. Future scheduling to be determined.
	Spring 2002	EVT-1	EVT-1 from OD of Top Guide RSW at 60 degrees. No Reportables. 1 of 4 Top Guide RSW every 2 cycles, or 4 years.
Core Shroud Support Ledge (H-9) (BWRVIP-38, 2000)	Fall 1994 / 1R15	VT-1/3	0-360° where accessible, from top once/interval. No indications. Future examinations to be determined. Very limited for EVT-1. Possible UT next outage.
Core Shroud Support Ledge Access Hole Covers (2) 0° & 180°. (Augmented)	Fall 1992	UT	UT indications. Acceptable for one cycle.
	Spring 1993 / 1R14	VT-1/3	Replaced with mechanical design in 1993. Typical for 2 at 0° & 180°. Examine one every outage / or 2 each period, VT-1 bolting tack welds/VT-3 remaining. No reportable indications.
	Fall 1994 / 1R15	VT-1/3	Examine each period. Examined 0°. No reportable indications
	Spring 1996 / 1R16	VT-1/3	Examine each period. Examined 180°. No reportable indications.
	Fall 1997 / 1R17	VT-1/3	Examine each period. Examined 0°. No reportable indications.

	Spring 1999 / 1R18	VT-1/3	Examine each period. Examined 180°. No reportable indications.
	Fall 2000 / 1R19	VT-1/3	Examine each period. Examined 0°.where evidence of leakage on the shroud side was observed. Examined 180°. and found similar evidence of leakage. Determined that leakage is expected.
	Spring 2002	VT-1/3	Examine each period. Examined 180°. evidence of expected leakage.
Core Spray Internal Piping (BWRVIP-18, 1997)	1980's to Spring 1996 / 1R16	VT-1/.001mil resolution	IEB 80-13/NUREG CR-4523. Examine each outage.
	Fall 1997 / 1R17	EVT-1	BWRVIP-18 implemented 1997. No indications.
	Spring 1999 / 1R18	EVT-1	No indications.
	Fall 2000 / 1R19	EVT-1	No indications.
	Spring 2002 / 1R20	EVT-1	No indications.
Core Spray Sparger (BWRVIP-18, 1997)	1980's to Spring 1996 / 1R16	VT-1/.001mil resolution	IEB 80-13/NUREG CR-4523. Examine each outage. Mechanical Repair Clamp on T-Box Cover Plate in 1984.
	Fall 1997 / 1R17	CSVT-1	BWRVIP-18 implemented 1997. No Reportables.
	Spring 1999 / 1R18	EVT-1/ VT-3	Began Sparger inspections as Geometry Critical. No Reportables.
	Fall 2000 / 1R19	EVT-1/ VT-3	No Reportables.
	Spring 2002 / 1R20	EVT-1/ VT-3	No Reportables.
Top Guide (BWRVIP-26, 1997)	Fall 1994 / 1R15	Fall 1994 / 1R15	VT-1 (.001) of Beams at 10 Cell Locations. & 4 - hold down bolts. EVT-1.

	Spring 1996 / 1R16	VT-1	4 Aligner Pins & Brackets, 4 Hold-down Brackets. No Indications.
	Fall 1997 / 1R17	VT-1	BWRVIP-26, 2 adjacent aligner pins. No indications. Accessible Rim Weld, VT-1. (EVT-1 required, no credit taken due to the in-ability to brush). No indications.
	Spring 1999 / 1R18	VT-1	2 adjacent aligner pins. No indications. Hold-downs no longer required due to GE evaluation.
	Fall 2000 / 1R19	VT-3	7-grid areas (VT-3 ASME) during (CRB) Control Rod Blade replacement.
	Spring 2002 / 1R20	VT-1	VT-1, 2 of 4 Top Guide Hold-downs, 180 degrees apart, every other outage beginning 1R20.
Core Plate (BWRVIP-25)	Fall 1990 / 1R12	VT-1/3	VT-1 of Alignment Assembly (4). VT-1 Accessible Bolts from top surface. No reportable indications.
	Fall 1994 / 1R15	VT-1	VT-1 of Alignment Assembly (4). VT-1 Accessible Bolts from top surface. No reportable indications.
	None	N/R	BWRVIP-25 examinations not required per Hatch configuration since installation of wedges during shroud repair in 1994. No future scheduling.
	Fall 2000 / 1R19	VT-3	7-top surface areas during (CRB) Control Rod Blade replacement. Also, 8-Core Plate By-Pass Flow Hole Plug. No reportable indications.
	Spring 2002 / 1R20	VT-3	14-core plate top surface areas during Guide Tube inspections. Also, 14-Core Plate by-pass Flow Hole Plugs. No reportable indications
Standby Liquid Control (BWRVIP-27)	Fall 2000 / 1R19	Direct VT-2 or UT	Performed direct VT-2 during leakage test. No indications.

Jet Pump Assembly (BWRVIP-41, 1999)	Through 1996 / 1R16	VT-1/3	ASME Riser Brace Arm Attachments. No Indications. Augmented SIL's/RICSIL's for Restrainer Adjusting Screw Tack Welds & Gap's. Riser Brace Arm to Riser Welds. Hold-Down Beams, Inlet mixers, Sensing Lines. Hold down beams replaced in 1990 due to UT indications.
	Fall 1997 / 1R17	VT-1/3 & EVT-1	All Thermal Sleeve to Risers welds, and some transition piece, diffuser, adapter examined 1997. Two indications that where reported in 1997 on the thermal sleeve to elbow welds HAZ's. Acceptable.
	Spring 1999 / 1R18	VT-1/3 & EVT-1	BWRVIP-41, intended to perform visual examination of all high priority welds, but could not perform EVT-1 examination of lower diffuser welds due to mainly gusset interference's. May perform UT on those welds next outage. UT examination of all Jet Pump Beam Bolts, no indications. Examined adjusting screw tack welds & gaps, 1 broken tack weld, and 4 set-screw gaps, worst one was .019" (no corrective action required). Additionally examined the restrainer wedge assemblies with the associated set-screw gaps (no reportable indications). Two indications that where reported in 1997 on the thermal sleeve to elbow welds had no significant change (took better measurements).
	Fall 2000 / 1R19	VT-1 & EVT-1	BWRVIP-41, made another attempt to perform EVT-1 examination of lower diffuser welds due to mainly gusset interference's. Re-examined adjusting screw tack welds & gaps, 1 broken tack weld, and 4 set-screw gaps reported during 1R18. No significant changes. One gap went away. Indications on the two thermal sleeve to

			elbow welds (EVT-1) that where first reported in 1997 and re-examined in 1999 had no significant changes. Nine of ten Riser brace arm to pad, and pad to vessel welds (EVT-1). No reportable indications.
	Spring 2002	EVT-1, VT-1	50% of the population of the medium priority items. Augmented 50% of the sensing line support brackets. No Reportables.
CRD Guuide Tubes (BWRVIP-47)	Fall 2000 / 1R19	EVT-1 / VT-3	Tentative plans for inspections during 1R20 /Spring 2002. A FSC/GT Anti-Rotation Pin at 18-03 was reported as being loose in 1996. Was examined from the top side during 1R19, Fall 2000. Is welded from bottom.
	Spring 2002 / 1R20	EVT-1 / VT-3	EVT-1, 10% of the population (14) Guide Tubes CRGT-1, CRGT-2, & CRGT-3 welds, and VT-3 of FSC/GT Anti-Rotation Pins. Also examined applicable fuel support castings.
CRD Stub Tubes	None Required	VT-2	None scheduled (VT-2 during class 1 pressure test).
In-Core Housing (BWRVIP-47)	None Required		None scheduled
Dry Tube (BWRVIP-47)	None Required		None scheduled
Instrument Penetrations (BWRVIP-49)	Spring 1993 / 1R14	VT-2	Pin hole leak in 1993 was repaired.
	Fall 1994 / 1R15	PT/VT-2	No reportable indications.
	Fall 1997 / 1R17	PT/I/UT/ VT-2	N10, N16A/B nozzles direct visual 1997. N10, N11A/B, N12A/B UT & PT in 1997. Examined during leakage test. No reportable indications.
	Spring 1999 / 1R18	VT-2	Future PT/UT may be exempt due to size/safety function/ and make-up capacity.

	Fall 2000 /1R19	VT-2	Future PT/UT exempt due to size/safety function/ and make-up capacity per Engineering.
*RPV Interior Attachments (BWRVIP-48) *Other Attachments examined by other BWRVIP documents.	Spring 1996 / 1R16 Fall 1997 / 1R17 Spring 1999 / 1R18	VT-1/3	Surveillance Specimen Brackets (3) No reportable indications.
	Fall 1997 / 1R17	VT-1/3	Guide Rod Brackets (2). No reportable indications.
	Spring 1993 / 1R14 Fall 1997 / 1R17	VT-1/3	Steam Dryer Support Brackets (4). No reportable indications.
	Fall 1994 / 1R15	VT-1	Steam Dryer Support Hold Down Brackets (4). No reportable indications.
	Spring 1999 / 1R18	VT-1/3	FW Sparger Brackets (4) every fourth outage per NUREG-0619 commitments. No reportable indications. Future scheduling to be determined.
	Spring 2002 / 1R20	VT-1, VT-3, EVT-1	VT-3, 2-Guide Rod Brackets. VT-1 1-Upper Surveillance Specimen Bracket. VT-3, 1-Lower Surveillance Specimen Bracket. EVT-1, 4-Steam Dryer Support Brackets. EVT-1, 4-Feedwater Brackets. No Reportables.
LPCI Coupling (BWRVIP-42)	Not Applicable to Hatch	N/A	N/A
Feedwater Spargers (NUREG-0619)	Fall 1994 / 1R15 Spring 1996 / 1R16 Fall 1997 / 1R17 Spring 1999 / 1R18	VT-1/3	Sparger Arms, Flow Holes, Brackets, Tees, Welds, Nozzle Blend Area. No reportable indications. Schedule 2 of 4 every outage per NUREG-0619 commitments. Future scheduling to be determined.

Many ASME Examinations have been deferred on components where BWRVIP examinations overlap.
Steam Dryer / Moisture Separator not listed.

Reactor Internals Inspection Summary

Plant: **LaSalle County Station Unit 1, L1R09**
Notes: This is a summary of LaSalle Unit 1, Refueling Outage 09 in Winter of 2002.
NRI = No Recordable Indications.

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Shroud			Not scheduled for inspection in L1R09.
Shroud Support	L1R09	VT-3	▪ Inspection of the general condition of the RPV interior surface from the RPV closure flange elevation to the Steam Dam, 360° around the RPV interior. NRI.
		VT-3	▪ Inspection of the general condition of the cladding at the steam dam elevation, 360° around the RPV interior. NRI.
		VT-3	▪ Examined H9 shroud to RPV weld, gusset plate to RPV weld, shroud support plate welds, and shroud support plate surface. NRI.
		VT-3	▪ Examined RPV cladding from below core plate to shroud support plate. NRI.
Core Spray Piping	L1R09	EVT-1	▪ Examined the Core Spray piping welds that the UT Tool (CSI-2000) cannot inspect (welds P1, P2, P4a, P4c, P4d, P8a and P8d). NRI.
Core Spray Sparger	L1R09	EVT-1	▪ Examined the upper and lower sparger welds S1, S2, and S4. NRI.
		VT-1	▪ Examined the upper and lower sparger welds S3 between 270° and 10°. NRI.
		VT-3	▪ Examined the upper and lower support brackets at 275°, 315°, and 350°. NRI.

Top Guide (Rim, etc.)			Not scheduled for inspection in L1R09.
Core Plate (Rim, etc.)			Technical Justification in place for inability to examine hold down bolts.
SLC	L1R09	VT-2	Visual inspection of the partial penetration weld to the bottom head during the Section XI system leak test. NRI.
Jet Pump Assembly	L1R09	VT-3 VT-1 VT-1 VT-1 VT-1	Examined WD-1 on jet pumps 1, 8, 9, and 10. NRI Inspected AS-1 (vessel side) on jet pump 6 (24 mil gap observed and an Auxiliary Wedge installed to close the gap). Inspected AS-1 (vessel side) on jet pumps 10 and 11. NRI. Inspected AS-1 (shroud side) on jet pump 6. NRI. Inspected AS-1 (shroud side) on jet pump 11 (18 mil gap observed and an Auxiliary Wedge installed to close the gap.)
Jet Pump Diffuser			Not scheduled for inspection in L1R09.
CRD Guide Tube	L1R09	VT-3 VT-3 EVT-1 EVT-1	• Examined 20 CRGT alignment lugs (CRGT-1) of the 21 CRGT that were vacuumed this outage. Inspection included general condition of the core plate. NRI. • Examined the same 20 CRGT locations for the fuel support alignment pins (FS/GT-ARPIN-1). NRI. • Examined 21 CRGT locations (same 20 as above plus one additional) at the body-to-sleeve weld (CRGT-2). NRI. • Examined 21 CRGT locations (same 20 as above plus one additional) at the base-to-body weld (CRGT-3). NRI.

CRD Stub Tube			Not scheduled for inspection in L1R09.
In-Core Housing			Not scheduled for inspection in L1R09.
Dry Tube	L1R09		Examined IRMs and SRMs per SIL 409.
		VT-1	IRM D, E, H and SRM A: NRI
		VT-1	IRM G: 180° through-wall crack and indication to 270° in non-pressure retaining perforated tube/plunger area. Accepted for one cycle.
		VT-1	SRM B: 130 to 180° through-wall crack in non-pressure retaining perforated tube/plunger area. Accepted for one cycle.
		VT-1	SRM C, D: cracked and replaced.
Instrument Penetrations	L1R09	VT-2	Penetrations are exempted from Section XI due to their size. Inspected as part of the Section XI system leak test. NRI.
Attachment Welds			Not scheduled for inspection in L1R09.
LPCI Coupling			Not scheduled for inspection in L1R09.

Reactor Internals Inspection History

Plant: **Nine Mile Point Unit #2**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	**RF08 (3/02)**	**EVT-1**	**Visual exam of V24 & V25 OD only, no indications noted**
		UT	RF07 (3/00) Performed UT exams of H4 & H5 only. Crack growth was within established limits.
	RF06, 1998 Then, even numbered outages	UT	RF06 (5-98) - Base line UT exams performed. Welds H1 through H7 inspected with indications observed in all but weld H6. Indications varied from approximately 2% to 85% of length inspected with maximum depth of 0.65 inches. All indications acceptable for continued operation. Welds V12 through V17 inspected with no indications observed.
	RF03 (10/93)	VT	H1, H2, H7 OD H3, H4, H5 ID No reportable indications
Shroud Support	**RF08 (3/03)**	**EVT-1**	**Both access hole covers examined, no indications noted. (SIL 462, rev 1 exam)**
	RF07	EVT-1	~25% of H9A & H9B RF06 (5-98) - No Inspections Performed
	RF04 (5/95)	IVVI (VT-	The shroud support access hole cover

		3)	welds were found to be free of radial cracking.
Core Spray Piping	**RF08 (3/02)** RF07 (3/00) RF06, 1998 RF01 (10/90) RF02 (3/92) RF04 (5/9)	**EVT-1** VT EVT-1 VT	**Inspections performed per BWRVIP guidelines. No indications found.** RF07 (3/00) – Per BWRVIP-guidelines, 100% of target welds and 25% of remaining welds. No indications found RF06 (5-98) - No Indications EVT-1 only No indications
Core Spray Sparger	**RF08 (3/02)** RF06, 1998 RF01 (10/90) RF02 (3/92) RF04 (5/95)	**EVT-1 / VT-1** VT VT VT	**Inspections performed per BWRVIP guidelines. No indications found.** RF07 (3/00) Per BWRVIP guidelines - 1 sparger (welds S3a, S3b,S3c & brackets) No indications found RF06 (5-98) - No Indications EVT-1 & MVT No indications
Top Guide (Rim, etc.)	**RF08 (3/02)**	**VT-3**	**Completed inspections of 3 holddown clamps. No indications found. (1 restricted coverage of 50% due to fuel, rescheduled for RF09)**

		VT	RF07 (3/00) – Limited inspection on the 4 "C-clamps" . Limited due to fuel cells not removed. Scheduled for RF08 to meet BWRVIP requirements
	RF06, 1998	VT-3	No Indications
	RF01 (10/90)	IVVI (VT-3)	No indications
	RF02 (3/92)		
	RF04 (5/95)		
Core Plate (Rim, etc.)	**RF08 (3/02)**		**Performed engineering evaluation to justify no inspections required in RF08**
		VT-3	RF07 (3/00) No inspections performed
	RF-06, 1998		Examine Bolt Locking Device per SIL 588R1
			RF06 (5-98) - No Indications Core plate bolting & Core plate
SLC	**RF08 (3/02)**		**N/A, NMP2 (injects boron through HPCS line)**
			RF07 (3/00) No Inspections performed
	RF06	PT	2RPV-KB34 provides core ΔP only Nozzle exams per ASME code No Inspections
	RF04 (5/95)	PT	Core plate ΔP only this unit 2RPV-KB34 No reportable indications
Jet Pump Assembly	**RF08 (3/02)**	**EVT-1 VT-1**	**Baseline inspection of 5 JP's performed. Expanded sample of all to determine restrainer bracket wedge wear and / or set screw gaps. Installed 2 aux. wedges, (JP 6 & 11) to address**

			gaps. 3 additional set screw gaps identified (JP 7,16,20 gaps within engineering allowable) No other indications were noted.
Jet Pumps 5,6,15,16		VT	RF07 JP 5 & 6 reinspected wedges for previously identified movement, no major change noted
Jet Pumps 1 thru 10	RF06	EVT-1 VT-1	No Indications Welds RS-1, RS-2 & RS-3 Riser welds RB-1, RB-2, RB-8 & RB-9
Jet Pumps 5, 6, 11, 12, 19, 20	RF06 (5-98) Expanded Scope	VT-1	Beam engagement, Rams head seating, Set screw gap & tack welds, and wedge assembly
	RF05 (11/95)		Adjusting screws gap RF04-RF05
	RF04 (5/95)		Replaced Beams RF04
	RF02 (3/92)	IVVI (VT-1)	
	RF01 (10/90)		Adjusting screws tackwelds RF01, 2, 5
Jet Pump Diffuser **JP 16 thru 20**	**RF08 (3/02)**		**Diffuser welds were part of JP baseline** RF07 (3/00) JP 5,6,15,16 Inlet mixers, crude buildup noted RF06 (5-98) - ISI Program plan has no special inspection frequency, it is performed during the code required B-N-1 examinations.
CRD Guide Tube	**RF08 (3/02)**	**VT-1** **EVT-1**	**9 guide tubes examined in place, no indications noted** RF07 (3-00) - No inspections performed RF06 (5-98) - N/A
CRD Stub Tube	Only when	VT	**Not made accessible**

	accessible		RF07 (3/00) – No inspections performed RF06 (5-98) - N/A
In-Core Housing	Only when accessible	VT	**RF08, not made accessible** RF07 (3/00) No inspections performed RF06 (5-98) - N/A
Dry Tube	**RF08 (3/02)** RF05 (11/96) RF04 (5/95) RF01 (10-90)	**VT-1**	**9 dry tubes examined per SIL409-R2, no indications noted** RF07 (3/00) - No inspections performed RF06 (5-98) - Examined 12 Dry Tubes, 3 were reported separation at the collar to shaft interface Bent plunger found @RF04 Replaced @RF05
Instrument Penetrations	**RF08 (3/02)**	**UT**	**Nozzle N-14 (ICS) required by SIL 571, no indications found** RF07 (3/00) - No inspections performed RF06 (5-98)-No Inspections performed
Vessel ID Brackets	**RF08 (3/02)** RF04 (5/95)	**EVT-1** VT	**Examined 3 JP riser brace and 8 CS vessel attachment welds, no indications noted** RF07 (3/00) - No inspections performed RF06 (5-98) - No Indications Jet Pumps 1 thru 10 riser brace welds 50% riser brace welds each outage No indications

	RF02 (3/92) RF01 (10/90)		
LPCI Coupling	**RF08 (3/02)** RF07 (3/00) N/A	**EVT-1** EVT-1 N/A	**Examined the remaining 2 couplings, no indications noted** RF07 (3/00) – Per BWRVIP guidelines one LPCI coupling was examined. No indications found RF06 (5-98) - No Inspections

Reactor Internals Inspection History

Plant: **Quad Cities Station Unit 2, Q2R16, March 2002**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
CRD Guide Tube Welds	02/26/02	VT-1 and VT-3; CRGT-1, EVT-1; CRGT-2 & 3	Examined 6 sets of guide tube welds (CRGT-1, CRGT-2, and CRGT-3) per BWRVIP-47. No Indications.
Fuel Support Alignment Pin welds.	02/26/02	VT-1 and VT-3	Examined 6 pin welds (FS/GT-ARPIN-1) per BWRVIP-47. No Indications.
Core Spray Piping	02/26/02	UT EVT-1 on piping	BWRVIP-18 UT examinations of all accessible welds (32). No relevant indications. BWRVIP-18 EVT-1 on 5 welds inaccessible to UT. No indications.
Core Spray Spargers	02/26/02	EVT-1; S1, S2, & S4 VT-1; S3 VT-1; brackets	Examined16 sparger welds, 100% of the S3a, b & c nozzle welds, and all sparger brackets. Examined for IEB 80-13 and BWRVIP-18. No indications.
Dry Tube	2/2702	MVT-1	Examined 6 dry tubes. Indications observed on 5 dry tubes, and authorized for one additional cycle of operation..
Feedwater Spargers	2/26/02	VT-1	Examined all Feedwater Spargers. Examined per NUREG-0619 program and BWRVIP-48. No indications.
Shroud	02/27/02	EVT-1	6 vertical welds from the OD per BWRVIP-76. No indications.
Top Guide	02/26/02	EVT-1/VT-1	Inspected 2 alignment assemblies (VT-1) and accessible rim welds (EVT-1) per BWRVIP-26. No indications.
RPV Internal Surfaces (Cladding)	02/2/7/02	VT-3	VT-3 visual examination for ASME Section XI, B-N-1 of RPV internal surfaces for 360 degrees between steam dam and flange. No indications.

Jet Pump Assembly	02/27/02	EVT-1 and VT-1	Inspections per BWRVIP-41; Jet pump beams were replaced on 18 jet pumps. EVT-1 and VT-1 of 18 beams; pre- and post replacement (pumps 7 and 18 not replaced because already had BWR-4 style beams) A gap was identified on jet pump 1, and a set screw was missing on jet pump 7. Auxiliary wedges were installed at these locations. Additionally, the set screws on pumps 7 and 18 and the riser braces for jet pumps 17 and 18 were inspected. Jet pump sensing line clamps were installed on 8 jet pumps (1, 2, 3, 10, 11, 12, 13, 20)
Vessel ID Brackets	02/16/02	VT-1, EVT-1 and VT-3	Inspected 8 core spray brackets, 4 feedwater sparger brackets, and 4 steam dryer wall support brackets per BWRVIP-48. No indications.
Steam Dryer	02/27/02	VT-3	The dryer was modified to accommodate the Extended Power Uprate. The modification installed a mechanical device on the outlet of the dryer chevrons that would more uniformly distribute the velocity through the dryer and increase moisture removal. General Condition Inspection (VT-3) of general top-view post-modification. No indications.

Reactor Internals Inspection History

Plant: **Susquehanna Unit 1**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	1993, 1995, 1996, 1997, 1998 and 2000 results.	VT-1 and UT	7 RFO (Fall 93), (VT-1) the OD of H3, H4, and H5, and the corresponding vertical welds in the 0 to 135 degree azimuth. No reportable indications. 8 RIO (Spring 95), circumferential welds H1 through H7 inspected ultrasonically using GE OD Tracker system. Cracking found in H1, H2, H4, H5, H6A, and H6B. Most significant in degrees of cracking were H2 (28^0), H4 (104^0), H5 (106^0), and H6B (38^0). Structural margins were maintained based on BWRVIP documents GENE-523-113-0894, Rev 1, and Supplement 1, Rev 1, and independent calculations.
		UT	9 RIO (Fall 96), partial ultrasonic inspection of shroud ultrasonically for crack growth information using the OD Tracker. Weld areas inspected were 180^0 of H1, H2, H4, H5, and H6B. Structural margins were maintained based on BWRVIP documents GENE-523-113-0894, Rev 1, and Supplement 1, Rev 1, and independent calculations.
		UT	Unit 1 10 RIO (Spring 98), Partial UT examinations of the H4 and H5 welds were made in the 0 and 180 degree azimuth locations previously uninspected. On the H4 weld 3 new indications were found. The H5 weld did not have any indications in the inspected region.
		VT-1	The vertical weld designated H5/H6A-

		enhanced	135 was visually inspected on the OD for 41" and on the ID for 24" on both sides of the weld. No indications were observed.
		UT	11 RIO (Spring 2000) Horizontal welds H4 and H5 were re-examined using the TEIDE tool from Spain. Full 360 degree UT examination revealed 60.3% of H4 cracked and 47.1% of H5 cracked, mostly on the ID of the shroud. Safety margins were calculated for each weld and analysis showed 6 years of useable life for the H4 weld and 10 years for the H5 remained before reinspection required using BWRVIP-76 techniques.
		UT/VT-1E	1-11 RIO (Spring 2000) vertical welds: Seven (7) vertical welds were examined using either UT or VT-1/1E techniques selected using BWRVIP criteria. One weld, V-15 @ 180 degrees between H4/H5 welds, showed a small defect 0.94" long and 0.37" deep. This weld met safety limits, but would have to be reinspected in 6 years.
Shroud Support	To date	VT-1	Unit #1 Shroud Support legs inspected in 1993 during Jet Pump Beam replacements. No recordable indications.
		VT-1 and enhanced VT-1	VT-1 of 0^0 to 360^0 of H8 and H9 during the first interval with no recordable indications. Unit #1 8 RIO (Spring 95), H8 and H9 examined (enhanced VT-1) for 360^0 of accessible area. No recordable indications. Unit #1 9 RIO (Fall 96), 18 inch indication found behind AHC at 180^0 at the shroud support horizontal plate to shroud cylinder plate weld H8 while performing AHC inspections. UT performed of the accessible areas of the

			indication. Inspected (enhanced VT-1) remaining accessible areas of H8 and 360^0 of accessible H9 without any additional recordable indications. Structural margins were maintained.
		UT	10-RIO (Spring 98) the H9 weld was inspected 100% from the OD of the vessel and No indications were found. The H8 weld was inspected over 10.21% or 64.4" of the circumference from the OD of the vessel and No indications were found.
		VT-1	VT-1 examinations were performed on shroud weld H8 at 180 deg. to verify a previously noted crack adjacent to the access hole cover. The indication was determined to be nonrelevant due to dark grit built up at the weld toe.
Core Spray Piping	1980's to 1995	VT-1, VT-3	Piping and welds in annulus. No recordable indications.
	1996	VT-1 enhanced, UT	9 RIO Inspect per BWRVIP-18, no relevant indications though one indication was ultrasonically examined and no depth was recorded.
	1998	VT-1E and VT-3	10 RIO Inspect per VIP –18. No reportable indications were observed.
	2000	EVT-1	11 RIO Inspect per VIP –18. No reportable indications were observed.
	2002	UT& EVT-1	12 RIO (spring 2002) Inspect per VIP-18. No reportable indications
Core Spray Sparger	1980's to 1995	VT-1,VT-3	No recordable indications, but one indication found in 1985 on S2, 173 degrees was identified.
	1996	VT-1, VT-3	9RIO Inspect per BWRVIP-18. Cracking found visually on shroud ID at #4 Core Spray Support Bracket. Determined acceptable to Use-as-is.

	2000 2002	EVT-1 EVT-1	11 RIO – no recordable indications in spargers. 12 RIO – Linear indication core spray sparger tee box S2 weld @173 degrees. This was the same indication identified in 1985. It was evaluated for use as is since it did not grow in size over 17 years.
Core Plate (Rim, etc.)	to date	VT-1 of surface welds and bolt tack welds on upper surfaces VT-3 of bolt and upper surface and crossmembers	Unit #1 has not been accessible for inspection to date.
Top Guide (Rim, etc.)	To 1995 1996	VT-3 VT-3	(VT-3) of accessible cells up to percentage of total over the interval (lower surfaces only). Also, inspection of hold-down bolts. 9RIO . No recordable indications.
SLC	92	VT-3	6 RIO One side of the Standby Liquid Control Standpipe inspected. Disassembly of the jet pumps for a Power Uprate modification made inspection possible. No recordable indications were found.
Jet Pumps	93-96	VT-1, VOL, VT-3	Riser brace welds inspected every other outage. Jet pump beam volumetric exams once in ten years. Remaining components (welds (VT-1), set screws (VT-3), wedges (VT-3), sensing line clamps (VT-1 & VT-3), tack welds (VT-1), etc are once per period. Jet pump beams replaced

	1993	VT-1M	7 RIO Beams replaced. Non-rejectable gaps in set screws reported over several outages.
	1998	VT-1 & EVT-1	10 RIO . Jet Pumps 11-20 were inspected per BWRVIP-41 guidelines. No reportable indications.
	2000	VT-1 & EVT-1	11 RIO Jet pumps 01, 02, 03, and 04 inspected per BWRVIP-41. No recordable indications.
	2002		12 RIO Jet Pumps 05, 06, 11, and 12 inspected per BWRVIP-41, all jet pump set screw gaps measured, all wedges inspected. Excessive set screw gaps on JP–02 (shroud side set screw), JP-11 (shroud side set screw), JP-12 (shroud and vessel side set screws), JP-13 (vessel side set screw), JP-17 (shroud and vessel side set screws), and JP-20 (shroud side set screw). A total of eight auxiliary spring wedges installed. in the above listed jet pumps. Additional riser brace inspections were performed on JP-02, 11, 12, 13, 17 and 20. No recordable indications.
LPCI Couplings			Not applicable to this plant
Lower Plenum Components			
CRD Guide Tubes	2002	EVT-1 and VT-3	12 RIO, inspected 4 guide tubes, CRGT-1,2,and 3 per BWRVIP-47. No recordable indications.
Dry Tubes	to date, every other outage	VT-3	No recordable indications
Instrument Penetrations	1985 to present	VT-2	VT-2 exams during RPV pressure test each outage.
Vessel Brackets	to date	VT-1 and VT-3	1989 Section XI inspections of jet pump riser brace, dryer, feedwater brackets, core spray header brackets, and

			surveillance capsule holder brackets, performed once per interval. Unit #1 Dryer Support Block C replaced due to fatigue cracking. "Measurable but acceptable wear"
	1998	VT-3	10RIO VT-3 Examinations were performed on the dryer hold down bracket attachment welds located at 138 and 221 degrees. No reportable indications were observed. VT-3 Examinations were performed on the dryer support brackets and attachment welds located at 4, 94, 184 and 274 degrees. No new indications were observed. Previously recorded wear on support lug "D" at 274 deg. was verified and no additional wear noted.
	2000	EVT-1	11 RIO Core spray piping and sparger brackets, feedwater sparger brackets, and dryer support brackets.
	2002	VT-1, VT-3 and EVT-1	12 RIO. Core spray piping and sparger brackets examined, dryer support bracket, and surveillance sample holders. Some measurable wear on "D" dryer support bracket was noted.

BWR Vessel and Internals Project

Vessel Internals Inspection Summaries for Fall 2002 Outages

January 2004

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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	4/94-R13	EVT-1 and UT	Inspections per SIL 572, extensive indications in circumferential welds.
	4/97-R14	EVT-1 and UT	Inspected all shroud repair design reliant structure prior to installation of comprehensive repair (4 GE designed tie-rod assemblies). Inspections consisted of EVT-1 of all ring segment welds (accessible surfaces), UT for minimum ligament of all vertical welds accessible to scanner and EVT-1 for minimum ligament on all accessible surfaces of all vertical welds not accessible to the scanner.
	2/99-R15	VT-1	Examined all four tie-rod assemblies at locations specified by the manufacturer (GE). Keeper on 20° upper stabilizer locking device is backed-out and will not reseat. Acceptable for two cycles.
	10/00-R16	UT	Examined a 40° segment of H4 to assist in shroud qualification of Core Spray Repair. NRI.
	10/02	VT-1	Re-examine 20° upper stabilizer locking device. Remains unchanged. Establish baseline at R15.
Shroud Support	4/94-R13	UT/VT-1	Access hole cover VT/UT for circ and radial flaws. No indications identified.
	4/97-R14	EVT-1	Examined H8 and H9 for about 12" at 4 locations of shroud repair hardware attachment areas.

	2/99-R15	EVT-1	Per BWRVIP-38: Examined H8 and H9 between Jet Pumps 20 and 1 (312°-357°). NRI. Requirements for this inspection cycle are satisfied.
Core Spray Piping	1980's Through 1994	VT-1 (1MIL)	IEB 80-13 (1 MIL) VT-1 of piping and welds in annulus. Indications observed at two lower elbow to pipe welds 2P4c and 4P4c. These welds were repaired using GE designed clamps.
	4/97-R14	UT/EVT-1	UT Baseline inspections per BWRVIP-18 of all piping circ welds in annulus. Repairs removed and not reinstalled. EVT-1 of any piping welds in annulus inaccessible to scanner. Additional flaws identified on 1, 2 and 3P8a welds.
	2/99-R15	EVT-1	EVT-1 examined undemonstrated welds P8a and P4d on all four downcomers. Installed a "bumper" repair on 1P8a at the 80° downcomer.
	9/00-R16	UT/EVT-1	UT of "Target" welds and EVT-1 of all undemonstrated welds. Also EVT-1 of welds made inaccessible from repair installed on the 80° downcomer including 1P7, 1P4c, 1P4d, 1P8a and b. Welds 2P4c and 4P4c exhibited flaw growth as predicted by Flaw Evaluation.
	10/02-R17	VT-1	Visually inspected elbow welds that are normally UT examined for presence of "excessive grinding". NRI.
		EVT-1	All undemonstrated welds P8a and P4d and long seams on thermal collars, NRI.
Core Spray Sparger	1980's Through 1994	VT-1(1 mil)	IEB 80-13 (1 MIL) VT-1 of spargers and tee-boxes. NRI.
	4/97-R14	EVT-1, VT-3	EVT-1 of tee-box cover plate welds, tee-box to sparger arms, and sparger end caps; VT-3 of spargers and nozzles. NRI.

	10/00-R16	EVT-1, VT-3	Per BWRVIP-18: EVT-1 of all S1, S2 and S4. VT-1 of 50% of S3. NRI.
Top Guide (Rim, etc.)	4/94-R13	VT-1	VT-1 of 5 cells. No indications.
	4/97-R14	VT-1, EVT-1	VT-1 of all 4 alignment assemblies. EVT-1 of rim to bottom plate weld at 4 locations.
	10/00-R16	EVT-1	Examined 0° and 270° top guide alignment assembly welds and adjacent rim weld 11 per BWRVIP-26. NRI.
Core Plate (Rim, etc.)	4/97-R14	N/A	Install core plate wedges in conjunction with comprehensive shroud repair.
	2/99-R15	VT-1	Examine wedge after one cycle of operation per manufacturer (GE) recommendations. NRI.
SLC	10/03-R17	PT	PT of surface of Safe-end extension and safe-end to nozzle weld.
Jet Pump Assembly	4/94-R13	VT-1	Hold down beams, beam bolt keepers, lockplates and retainers; restrainer wedges, stops, and adjusting screws, clamp bolts and keepers; riser brace assemblies, adapters and baffle plate welds, sensing lines and sensing line brackets per various SILS. Prior to R13, visually inspect 100% of upper areas of each Jet Pump every other outage.
Jet Pump Beams	4/94-R13	UT	Jet pump beams are UT examined each outage using technique capable of detecting cracking at throat and ears. Beams were not replaced with improved heat treatment. All are original BWR3 style beams.
	4/94-R14	UT	Two beams with indications replaced.
	2/99-R15	UT	Inspected 100%. NRI.
	10/00-R16	UT	Two beams with indications replaced

			with BWR4 beams.
	03/03-D3M09	Base-line UT	Replaced all 17 original BWR3 and two older BWR4 beams with new weld-less keeper BWR4 beams.
Jet Pump Restrainer Gate Wedges	2/99-R15	VT-1	Per BWRVIP-41: Examined all twenty WD-1 locations. NRI. Inspection requirement for next two inspection cycles satisfied.
	03/03-D3M09	VT-1	Verified acceptable gaps when replaced beams. Wedges installed two locations.
Jet Pump Wall Braces	4/94-R13	VT-1	Riser brace arm to yoke welds on 3 upper riser braces found cracked. Unit 3 has a redundant set of riser braces so no repairs required. No other reportable indications.
	2/99-R15	EVT-1	Per BWRVIP-41, all twenty RB-1, 2, RS-8 and RS-9. NRI.
	10/02-R17	EVT-1	Five RS-9 and 10 riser to secondary brace yoke welds, NRI. All twenty secondary brace RB-3 welds per ASME XI and BWRVIP-48. NRI.
Jet Pump Risers	4/97-R14	EVT-1	All ten RS-1, 2 and 3. NRI.
	2/99-R15	EVT-1	Per BWRVIP-41: Examine all ten RS-4 and RS-5. This cycle complete. NRI.
Jet Pump Mixer	2/99-R15	EVT-1	Per BWRVIP-41: Medium Priority: 50% of MX-1, MX-3 and IN-5 welds. This cycle complete. NRI.
Jet Pump Diffuser	4/94-R13	VT-1	Diffuser to baffle plate welds on all 20 jet pumps. NRI.
	2/99-R15	EVT-1	Per BWRVIP-41: High Priority: 50% of DF-2, AD-1, 2 and 3 meets "next outage" requirement. Medium Priority: 50% of DF-1. This inspection cycle complete. NRI.
	10/02-R17	EVT-1	Examined 4 DF-2 welds. NRI.

CRD Guide Tube	10/00-R16 10/02-R17	EVT-1 EVT-1 and VT-3	Per BWRVIP-47: examined CRGT-1, 2 and 3 on D10. NRI. Examined 9 CRGT-1, 2 and 3 and FS/GT-ARPIN.NRI. This completes first 5% in 6 years.
CRD Stub Tube	4/97-R14	MVT-1	MVT-1 (1mil), CRD H7. NRI.
In-Core Housing	4/97-R14	MVT-1	ICH/RPV-1 and ICHGT/ICH-1, two inspected from cell H7. NRI.
Dry Tube	4/94-R13 2/99-R15	VT-1 N/A	Identified one cracked dry tube (24-37). Replaced. Examined every other outage to date. Not Examined. Per Reutter-Stokes recommendation, have not yet reached manufacturer's service life.
Instrument Penetrations	N/A	N/A	N/A
Vessel ID Brackets	4/94-R13 10/00-R16 10/03-R17	VT-1 VT-1 EVT-1	Section XI inspections of jet pump riser brace, dryer, feedwater sparger, core spray, and surveillance capsule holder brackets, performed once per interval. NRI. ASME Section XI B-N-2, surveillance capsule holder attachments in beltline. All six sets examined. NRI. BWRVIP-48 attachments: four dryer lugs, eight feedwater sparger end-brackets, eight Core Spray Piping brackets, attachment weld, pad surface and HAZ of cladding. NRI
LPCI Coupling	N/A	N/A	Not applicable to this plant.
Access Hole Cover	10/03-R17	EVT-1	Welds on cover at 155° and 335°. Covers on D3 have not been repaired.

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) totalling 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.
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 recordable indications.
	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
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.
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.
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	-	No inspections during RO15
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 reportable indications.
	Fall 1998	VT-3	Inspected 100% of hold down bolting. No recordable indications noted.
	Fall 2000	VT-3	Inspected core plate plugs at 5 core locations. No recordable indications noted.
	Fall 2002	-	No inspections during RO15
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	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".

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 recordable 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 recordable 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 recordable indications noted.
	Fall 2000	-	No inspections during RO14
	Fall 2002	EVT-1, VT-1, and VT-3	Completed inspection of Jet Pumps 5 and 6, and portions of Jet Pumps 19 and 20, with no recordable 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.
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	EVT-1 and VT-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 RO-13.
	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.
CRD Stub Tube	1992	VT-3	See above.
	Fall 1998	N/A	No inspections during RO-13.
	Fall 2000/2002	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 2000/2002	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 recordable indications noted.
	Fall 2002	VT-1	Re-inspected SRM Core Dry Tube 20-17 per GE SIL 409 and GE RICSIL-073 Guidelines. No recordable indications noted.
Instrument Penetrations	1992	VT-1	Two inspected in 1992. No recordable indications.
	Fall 1998	N/A	No inspections during RO-13.
	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	VT-2	Performed a VT-2 leakage test at 6 instrument nozzles (same as in RO14-Fall 2000). Test was "Accepted".
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 recordable indications noted.
	Fall 2000	-	No inspections during RO-14
	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

			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.
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.
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 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).
Surveillance Capsule Specimen Holder	Fall 2000	VT-1 VT-3	Inspected at one location, the upper and lower mounting bracket (VT-1) and the condition of the specimen holder (VT-3) No recordable indications noted.
Lower Plenum	Fall 2000	VT-3 VT-1	Inspected by VT-3 accessible areas of lower plenum per BWRVIP-47 Guidelines. No recordable indications noted. Inspected by VT-1 accessible areas of bottom head drain. After removal of debris the area was re-examined and

			found acceptable.
Feedwater Sparger	Fall 2002	VT-3	Inspected Sparger pipe assembly at 45, 135, 225 and 315 degrees azimuth, sparger welds and end brackets. No recordable indications noted.
		VT-1	Inspected Junction T-box welds and Nozzle Inner Radius (NIR) at 45, 135, 225 and 315 degrees azimuth. No recordable indications noted.
		UT	Inspected the NIR at all 4-locations. No recordable indications noted.

Reactor Internals Inspection History

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

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	Fall 2002	VT-1	SSHAC @ 0°. No failures
	Spring 1998	UT	All accessible areas of H3, H4, H6A, H7. No cracks
	Spring 1995	UT	Baseline per BWRVIP-01. All accessible areas of H3, H4, H6A and H7. No cracks.
	Spring 1995	VT-3	Shroud and general area. No failures. (Sil572)
	Spring 1992	VT-1	Shroud shelf weld No failures (Sil572)
Shroud Support	Spring 1998	UT	10.7% of total circumference of H8 (shroud support plate to shroud weld) and 15.4% of H9 (shroud support plate to vessel weld). No cracks.
	Fall 1996	VT-1 Above core plate.	Sect XI. Period 3 of 10yr interval. RF05/6 Attachment weld to vessel and shroud plate to shroud weld. No failures.
	Spring 1995	VT-3	Access hole cover. No failures. (Sil462)
Core Spray Piping	Fall 2002	EVT-1	All target welds (P3a and P5)with 25% of remaining piping locations. No failures
	Fall 2002	VT-1	All accessible areas of Core Spray Brackets (SB). Broken tack welds @ Cap Screw 7A previously reported.
	Spring 2001	EVT-1	All accessible P2, P2a, P3a, P5. 25% of remaining piping locations. No failures.
	Fall 1999	EVT-1	All accessible P2, P2a, P3a, P5. 25% of remaining piping locations. No failures.
	Fall 1999	VT-1	Both tack welds broken at Cap Screw

			7A. One crack previously reported during Spring 1998. No failures at other SB locations.
	Spring, 1998	EVT-1	All accessible piping locations. No failures.
	Spring 1998	VT-1	Broken tack weld at Cap Screw 7A. No failures at other locations.
	Fall 1996	VT-3	Augmented exam per IE 80-13. No failures.
	Fall 1996	VT-1	Core spray bracket welds. No failures.
Core Spray Sparger	Fall 2002	VT-1/VT-3	All core spray sparger target welds (S2a-h and S4a-h) and all accessible areas of the lower sparger welds. No failures
	Fall 1999	VT-1/VT-3	Upper Sparger- Accessible areas of spargers, tee boxes, brackets and supports. No failures.
	Spring 1998	EVT-1/ CS-VT-1	Accessible areas of spargers, tee boxes, brackets and supports. No failures.
	Fall 1996	VT-3	Augmented exam per IE 80-13. No failures.
Top Guide (Rim, etc.)	Spring 2001	VT-3	Accessible surfaces and fasteners. No failures
	Fall 1996	VT-3	Accessible surfaces and fasteners. No failures.
Core Plate (Rim, etc.)	Fall 1996	VT-3	Sect. XI, under core plate. Where access was provided in RF08, camera work was performed. No failures.
SLC	N/A	N/A	N/A
Jet Pump Assembly	Fall 2002	EVT-1	All required locations for JP 0304 and JP 0910. Examination exceptions are RB-1b, RB-1d, RB2a-d for JP0304; welds DF-1 for JP03 and JP04; DF-3 for JP03 and JP10; IN-1 and IN-2 for JP04; IN-2 for JP10. No failures

	Spring 2001	EVT-1	Accessible areas of RS-1 and RS-2 welds on JP01/02. No failures.
	Fall 1999	EVT-1	Accessible areas of RS-3 welds on JP07/08, JP09/10 and JP11/12.
	Spring 1998	MVT-1/ VT-3	Accessible areas of RS-3 welds on JP0102, JP0304 and JP0506. VT-3 on flow restriction on JP09, 10, 11 and 24. No failures.
	Fall 1996	UT	UT exam of beams. Two beams cracked in RF06, and all were replaced with Unit 2 spares. No UT exam done in RF07. In RF08 all beams were changed out with the new GE design and heat treat spec. components.
	Fall 1996	VT-3	Riser brace welds (Sil551) 50% each outage. Adjusting screws. 100 % each outage. No failures.
CRD Guide Tube	Fall 2002	EVT-1	CRGT-2 & 3 (10 places). FS/GT-ARPIN-1 (2 places). No failures
	Spring 2001	VT-3	12 guide tubes. 12 FS/GT-ARPIN-1 and CRGT-1. Accessible portions of CRGT-2 (2 places).
	Spring 1998	VT-3	34 CRGT-1 exams completed with no failures.
	Fall 1996	VT-3	8 guide tubes. When accessibility permits. No failures.
CRD Stub Tube	n/a	n/a	n/a
In-Core Housing	n/a	n/a	n/a
Dry Tube	Fall 2002	VT-1	Accessible areas of 6 LPRM dry tubes. No failures.
	Spring 1998	VT-3	11 guide tubes. As accessible. No failures.
Instrument Penetrations	Fall 1996	VT-3	No failures.

Vessel ID Brackets	Fall 1996	VT-1/VT-3	Sect.XI every 10 years on Attachment welds. Other parts of brackets on general VT-3 exam. No failures.
LPCI Coupling	Fall 2002	EVT-1	All accessible areas @ Az 39. No failures
	Spring 2001	VT-1	VT-1 on LPCI-C @ Az. 141 due to a previous loose parts impact concern. No failures.
	Fall 1999	VT-1	VT-1 on LPCI-C @ Az. 141 due to a previous loose parts impact concern. No failures
	Spring 1998	EVT-1	All chosen welds on LPCI couplings @ Az 41 and 141. No failures
	Spring 1996	VT-1	VT-1 on LPCI-C @ Az. 141 due to a previous loose parts impact concern. No failures

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.
	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.
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 &	Reinspection per BWRVIP-18, using UT

		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.
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.
Top Guide (Rim, etc.)	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.
	1976 to 1994	VT-3	VT-3 exam every other refueling outage per Section XI. 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.
Jet Pump Assembly	1976 to 1996	VT-3	Visual VT-3 of all jet pump components performed every other refueling outage.
	1994		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		Restrainer bracket wedge conditions and set screw tack welds remain unchanged, condition acceptable without repair.

	1981	VT & UT	VT and UT examination performed on all 20 hold down beams. No indications identified,
	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
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.
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

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	 1994	 VT-1	All Dry Tubes replaced in 1984 VT-1 examination of IRM Dry Tube 2D, at core location 37-32.
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.
Vessel ID Brackets	1976 to present 2000 2002	VT-1 or VT-3 EVT-1 EVT-1	VT-1 and VT-3 of all ID bracket welds performed once per interval per ASME Section XI. No indications identified. EVT-1 of six (6) Core Spray piping brackets. No indications identified. 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.
LPCI Coupling			N/A to this plant
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.

Reactor Internals Inspection History

Plant: **Oyster Creek Nuclear Generating Station**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	Fall 2002	EVT-1	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	Inspected per BWRVIP-01 and 03.

		and visual	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 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 enhanced VT-1, no findings.
Core Spray Piping	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 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 (Rim, etc.)	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 100% grid beams	12 indications emanating from notches 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 (Rim, etc.)	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.
SLC	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	Not made accessible.

		Inspection Performed.	
	Fall 1994	No Inspection Performed	Not made accessible.
Jet Pump Assembly	NA	NA	NA
Jet Pump Diffuser	NA	NA	NA
CRD Guide Tube	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 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 2002	No inspection performed.	Not made accessible.
	Fall 2000 Fall 1998 Fall 1996 Fall 1994	No inspection performed.	Not made accessible.
Dry Tube	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 2002 Fall 2000 Fall 1998 Fall 1996 Fall 1994	No inspection performed.	Not made accessible.
Vessel ID Brackets	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 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: **Quad Cities Station Unit 1, Q1R17, November 2002**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
CRD Guide Tube Welds	11/19/02	VT-3; CRGT-1, EVT-1; CRGT-2 & 3	Examined 9 sets of guide tube welds (CRGT-1, CRGT-2, and CRGT-3) and one additional weld (CRGT-2) per BWRVIP-47. No Indications.
Fuel Support Alignment Pin welds.	11/19/02	VT-3	Examined 9 pin welds (FS/GT-ARPIN-1) per BWRVIP-47. No Indications.
Core Spray Piping	11/16/02	UT EVT-1	BWRVIP-18 UT examination of all accessible welds (32). During the previous outage, indications were observed on welds 2P4D, 3P4D, and 4P4D (2 separate indications) and these were re-inspected this outage. A new indication was also observed on 3P4D that was not observed in the earlier outage. All were evaluated as acceptable for at least one cycle. BWRVIP-18 EVT-1 on 12 welds inaccessible to UT. Confirmed indications on welds identified by UT. No other indications. Re-inspected T-Box repair; no indications. The core spray piping bracket clamp at 125° was found loose. This condition was accepted as-is with a recommendation for re-examination.
Core Spray Spargers	11/16/02	EVT-1; S1, S2, & S4 VT-1; S3 VT-1; brackets	Examined all 20 S1, S2, and S3 sparger welds, 50% of the S3a, b & c nozzle welds, and all 12 sparger brackets. Examined for IEB 80-13 and BWRVIP-18. No indications.
Dry Tube	11/19/02	VT-1	Examined 5 dry tubes. No Indications.

Feedwater Spargers	11/16/02	EVT-1/VT-3	Examined 8 Feedwater Sparger end brackets. Examined per NUREG-0619 program and BWRVIP-48. No indications.
Shroud	11/16/02	EVT-1	6 vertical welds from the OD per BWRVIP-76. No indications. The steam dam above the shroud flange had impact damage. This was evaluated as acceptable as-is for indefinite continued operation.
Top Guide	11/16/02	EVT-1/VT-1	Inspected 2 alignment assemblies per BWRVIP-26. No indications.
RPV Internal Surfaces (Cladding)	11/15/02	VT-3	VT-3 visual examination for ASME Section XI, B-N-1 of RPV internal surfaces for 360 degrees between steam dam and flange. No indications.
RPV Internal Surfaces (Cladding)	11/15/02	VT-3	VT-3 visual examination for ASME Section XI, B-N-1 of RPV internal surfaces for 360 degrees between steam dam and flange. No indications.
Jet Pump Assembly	11/19/02	EVT-1 VT-1 VT-3	Inspections per BWRVIP-41; EVT-1 of DF-2, AD3-a&b, AD-1, AD-2 for all 20 jet pumps (except DF-2 on JP 11; EVT-1 of RB-1 and RB-2 of pumps 3, 4, 9, 10, 11, and 15-20; EVT-1 of risers on jet pumps 3/4, 9/10, 11/12, 15/16, 17/18, and 19/20; EVT-1 of MX-2, MX-3a&b, and MX-4 on pumps 4, 5, 9, 10, 11, 14/18 and 20; EVT-1 of MX-1 and DF-1 for pumps 6-11, 14-18 and 20; EVT-1 on the risers of pumps 3/ 4, 9/10, 11/12, 15/16, 17/18, and 19/20; VT-1 of AS-1 and AS-2 on pumps 5, 7, 8, and 20, VT-of wedges on jet pumps 16 and 20, VT-1 of clamp at RS-1 on jet pumps 19/10, and VT-3 of existing repair hardware at IN-5 on pumps 6-11, 14-17 and 20. One indication was found on JP 2 at AD-3b and two indications were found on JP 7 at AD-3b. Jet pump sensing line clamps were installed on 8 jet pumps (1, 2, 3, 10, 11, 12, 13, 20)

Vessel ID Brackets	11/16/02	VT-1, EVT-1 and VT-3	Inspected 8 core spray brackets, 8 feedwater sparger brackets, 11 jet pump riser brace welds, and 4 steam dryer wall support brackets per BWRVIP-48. No indications.
Steam Dryer	11/18/02		The dryer was modified by installing reinforcement plates over the existing 1/4" thick crescent-shaped cover plates.
		VT-3	General Condition Inspection (VT-3) of Dryer baffle plates, end bank cover and panel, tie bars, gusset plates, and upper bank plates. End panels inspected pre-repair and post-repair. The steam exhaust skirt was deformed at the 90° and 270° locations. These areas were evaluated and were accepted as-is. There are marks and stains on the steam bank covers at the 90° and 270° locations. Denting was observed at 3 of the 4 locations adjacent to the steam nozzles. These items were evaluated and were accepted as-is. The tie bar 4 was severed at the attachment point to bank 4; tie bar 9 was cracked at the weld to bank 5; and tie bar 4 tack weld was cracked at the center baffle plate. These items were repaired by installation of reinforcement bars. Four indications observed the previous outage on the upper extension skirt were re-inspected and found acceptable for at least one more cycle of operation.
		EVT-1	EVT-1 of hood with no indications.

Reactor Internals Inspection History

Plant: **Vermont Yankee**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
CRD Guide Tube	'95	N/A	None.
	'96	N/A	None.
	'98	N/A	None.
	'99	N/A	None.
	'01	EVT-1	Circumferential welds (CRGT-2 and CRGT-3) on four of 89 guide tubes. No indications.
		VT-3	Lugs and pin assemblies on four guide tubes. No indications.
	'02	N/A	None.
CRD Stub Tube	'83	VT-3	2 of 89. No indications.
Core Plate	'95	VT-3	10 fuel support castings. No indications.
	'96	VT-3	Seven fuel support castings. No indications.
		VT-3	All 30 rim hold-down bolts from above. No indications.
	'98	VT-3	Four fuel support castings. No indications.
	'99	VT-3	16 rim hold-down bolts from above. No indications.
	'01	VT-3	15 rim hold-down bolts from above. No indications.
	'02	VT-3	15 rim hold-down bolts from above. No indications.
Core Shroud	'95	UT	Seven circumferential welds. Significant indications found in H5 and H6, less extensive

			in H4. Very minor indications in H1, H2, and H3.
	'96	UT, ET	Six vertical welds (all welds between H3 and H7). No indications.
		EVT-1	Two vertical welds (both welds between H1 and H2) – OD only. No indications.
		UT, ET	Six ring-segment welds (all three at top guide and all three at core plate). No indications.
		VT-3	Four tie-rods (repair) installed. Baseline inspection performed.
	'98	VT-3	Retorqued, reinspected all four tie-rods.
	'99	VT-3	Reinspected all four tie-rods.
	'01	N/A	None.
	'02	VT-3	Ten-year (3rd Interval) Category B-N-2 core support structure inspection. No indications.
Core Shroud Support	'95	VT-1	Both access hole covers. No indications.
	'96	UT, ET	H8 (25%) & H9 (22%). No indications.
		VT-1	Both access hole covers. No indications.
	'98	MVT-1	Both access hole covers. No indications.
	'99	EVT-1	Both access hole covers. No indications.
	'01	N/A	None.
	'02	EVT-1	Both access hole covers. No indications.
		VT-3	Ten-year (3rd Interval) Category B-N-2 core support structure inspection. No indications.
Core Spray Piping	'95	CSVT-1	All piping and brackets. No indications.
	'96	UT	39 circumferential welds. Two collar-to-shroud welds (P8b) with indications.

		EVT-1	Five circumferential welds not accessible for UT. No indications.
		CSVT-1	All brackets. No indications.
	'98	EVT-1	Reinspected eleven circumferential welds: two with previous indications, nine that were inaccessible for full UT in '96. No indications.
	'99	EVT-1	Reinspected 30 circumferential target welds. No indications.
	'01	EVT-1	Reinspected 32 circumferential target welds. No indications.
		UT	Four P9 welds. These UT inspections were invalidated by further BWRVIP qualification work performed May 2002.
	'02	EVT-1	Reinspected 34 circumferential target welds. No indications.
		EVT-1	Inspected all four piping brackets and attachment welds. No indications.
Core Spray Sparger	'95	CSVT-1	100% IEB 80-13 inspections performed. No indications.
		VT-3	Repair clamp over tee-box plug (cracked weld) installed in 1980. No indications.
	'96	CSVT-1	100% IEB 80-13 inspections performed. No indications.
		VT-3	Sparger tee-box repair. No indications.
	'98	MVT-1	17 of 20 large (tee-box to header, tee-box cover plate, and header to end cap) circumferential welds (3 inaccessible). No indications.
		VT-3	Sparger nozzles. No indications.
		VT-3	All twelve brackets. No indications.
		VT-3	Sparger Tee-box repair. No indications.

	'99	VT-3	Sparger Tee-box repair. No indications.
	'01	EVT-1	17 of 20 large circumferential welds (3 inaccessible). No indications.
		VT-1	50% of nozzles. No indications.
	'02	VT-1	Inspected all 12 core spray sparger brackets. No indications.
Feedwater Spargers	'95	MVT-1	Tee-box welds and end bracket attachment welds. No indications.
	'96	N/A	No FW sparger inspections performed.
	'98	VT-3	Piping and brackets. No indications.
		MVT-1	Tee-box welds and end bracket attachment welds. No indications.
	'99	N/A	No FW sparger inspections performed.
	'01	VT-3	Piping and brackets. No indications.
		VT-1	Tee-box welds and end bracket attachment welds. No indications.
	'02	EVT-1	End bracket attachment welds. No indications.
In-Core Housing	'83	VT-3	2 of 89. No indications.
In-Core Dry Tubes	'95	VT-1, -3	Four dry tubes. No indications. (Dry tubes replaced in 1986 due to cracking.)
	'96	N/A	None.
	'98	N/A	None.
	'99	VT-1, -3	Two dry tubes. No indications.
	'01	N/A	None.
	'02	N/A	None.
Instrument Penetrations	N/A	N/A	N/A

Jet Pump Assembly	'95	VT-3	Restrainer wedges and set screws, inlet bolted connections, sensing lines on five assemblies (50%). No indications.
		VT-1	Welds on five riser braces (50%). No indications.
	'96	VT-3	Restrainer wedges and set screws, inlet bolted connections, sensing lines on five assemblies (50%). No indications.
		VT-1	Welds on five riser braces (50%). No indications.
	'98	UT	26 of 30 Riser RS-1, RS-2, RS-3, circumferential welds. Four welds with indications – maximum approx. 3".
		EVT-1	Remaining four riser RS-1 circumferential welds. No indications.
		MVT-1	Riser-to-restrainer RS-4, RS-5 welds on five assemblies (50%). No indications.
		MVT-1	Welds on five riser braces (50%). No indications.
		VT-1	Restrainer wedges on five assemblies (50%). No indications.
		VT-3	Restrainer set screws, inlet bolted connections, sensing lines on five assemblies (50%). No indications.
		UT	20 hold-down beams. One beam with UT indication on bolt hole replaced.
	'99	UT	160 mixer, diffuser, and adapter circumferential welds. Indications found on four diffuser welds, all less than 2".
		EVT-1	20 mixer (MX-1) welds. No indications.
		UT	Ten hold-down beams. No indications.

	'01	UT	Four RS-1 welds with indications from 1998. Two 1998 indications determined to be lift-off. No growth on others.
		VT-1	Restrainer wedges on five assemblies (one loop). No indications.
		VT-3	Restrainer set screws, sensing lines on five assemblies (50%). No indications.
	'02	UT, VT-1	Beams. No indications.
		UT	Four diffuser welds with indications. Indications matched '99 indications within NDE uncertainty.
LPCI Coupling	N/A	N/A	N/A
Miscellaneous Vessel ID Brackets	'95	VT-3	Reinspected one dryer support bracket with indication from 1992. No change.
	'96	UT	Reinspected same dryer support bracket from vessel OD. No change.
	'98	VT-3	Reinspected same dryer support bracket. No change.
	'99	N/A	None.
	'01	VT-3, UT	Reinspected same dryer support bracket. No change.
	'02	VT-3	Both guide rod bracket attachments. No indications.
		VT-3	All four steam dryer support brackets. Indication on one bracket unchanged.
		VT-3	All four steam dryer hold-down brackets. No indications.
		VT-1	Six surveillance specimen holder brackets. No indications.
SLC	'95	N/A	No SLC BWRVIP inspections.
	'96	N/A	No SLC BWRVIP inspections.

	'98	EVT-2	Nozzle-to-safe-end weld. No indications.
	'99	EVT-2	Nozzle-to-safe-end weld. No indications.
	'01	EVT-2	Nozzle-to-safe-end weld. No indications.
	'02	PT	Nozzle-to-safe-end weld and safe-end. No indications.
Steam Dryer and Separator	'95	UT	All shroud head hold-down bolts. Nine bolts with indications.
	'96	N/A	Replaced all steam separator / shroud head hold-down bolts.
	'98	VT-3	Steam dryer and separator. Indications on five tack welds on three jacking bolt (lifting eye) assemblies on the steam dryer.
	'99	VT-3	Reinspected cracked tack welds on steam dryer. No change.
	'01	N/A	None.
	'02	VT-1/3	Inspected dryer cover plates and welds and start-up instrumentation remnant. No indications.
Surveillance Specimen Holders	'02	VT-3	Both remaining surveillance specimen holders. No indications.
Top Guide	'95	VT-1	Ten locations in top guide grid IAW SIL-554. No indications.
	'96	VT-1	Seven locations in top guide grid IAW SIL-554. No indications.
	'98	MVT-1	Four locations in top guide grid IAW SIL-554. No indications.
	'99	VT-1	Two aligner assemblies. No indications.
		VT-1	Two hold-down assemblies. No indications.
		VT-1	Four locations in top guide grid. No indications.

	'01	VT-3	25% of rim and cover sheet bolts (NNS). No indications.
	'02	VT-1	Two hold-down assemblies. No indications.