

An Exelon Company

AmerGen Energy Company, LLC
4300 Winfield Road
Warrenville, IL 60555

www.exeloncorp.com

Nuclear

Exelon Generation
4300 Winfield Road
Warrenville, IL 60555

10 CFR 50.55a

October 5, 2007
RS-07-134
2130-07-20507

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Clinton Power Station
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Oyster Creek Generating Station
Facility Operating License No. DPR-16
NRC Docket No. 50-219

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Response to Request for Additional Information
Request for Relief - Use of the Boiling Water Reactor Vessel and Internals Project
(BWRVIP) Guidelines in Lieu of Specific ASME Code Requirements

- References:
- 1) Letter from P. B. Cowan (Exelon/AmerGen) to U. S. Nuclear Regulatory Commission, dated April 19, 2007
 - 2) Letter from C. Gratton (U. S. Nuclear Regulatory Commission) to C. M. Crane, dated September 5, 2007

In the Reference 1 letter, Exelon Generation Company, LLC (Exelon) and AmerGen Energy Company, LLC (AmerGen) requested relief from specific portions of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," on the basis that the proposed alternative provides

an acceptable level of quality and safety. Specifically, this proposed alternative concerns the use of the Boiling Water Reactor Vessel and Internals Project (BWRVIP) guidelines in lieu of specific ASME Code Requirements.

In a conversation with the U. S. Nuclear Regulatory Commission staff on August 24, 2007, a request for additional information was discussed. The U. S. Nuclear Regulatory Commission provided that request for additional information in the Reference 2 letter. Attachment 1 is our response to that request.

In addition to Attachment 1, the following attachments are being provided:

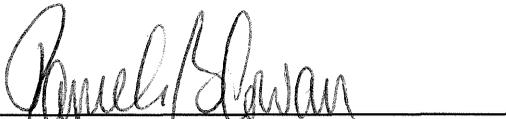
Attachment 2 – This attachment provides inspection histories for the Exelon/AmerGen facilities, as requested in questions 1 and 3.

Attachments 3 and 4 – These attachments provide revisions to the original relief request as provided in Reference 1. These revisions are the result of the request for additional information, and additional clarifications concerning shroud support plate gussets for the LaSalle County Station, Unit 1. Revision bars in the margin identify these changes.

There are no commitments contained in this letter.

If you have any questions, please contact Tom Loomis, 610-765-5510.

Very truly yours,



Pamela B. Cowan
Director, Licensing and Regulatory Affairs
Exelon Generation Company, LLC
AmerGen Energy Company, LLC

- Attachments:
- 1) Response to Request for Additional Information
 - 2) Inspection Histories
 - 3) Attachment 3, Revision 1, Use of BWRVIP Guidelines in Lieu of Specific ASME Code Requirements
 - 4) Attachment 4, Revision 1, Comparison of Code Examination Requirements to BWRVIP Examination Requirements

cc: Regional Administrator – NRC Region I
Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Clinton Power Station
NRC Senior Resident Inspector – Dresden Nuclear Power Station
NRC Senior Resident Inspector – LaSalle County Station
NRC Senior Resident Inspector – Limerick Generating Station
NRC Senior Resident Inspector – Oyster Creek Generating Station
NRC Senior Resident Inspector – Peach Bottom Atomic Power Station
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station
File No. 06039

Attachment 1

Response to Request for Additional Information

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
REGARDING A REQUEST FOR RELIEF TO USE THE BOILING WATER REACTOR VESSEL
AND INTERNALS PROJECT GUIDELINES AS AN ALTERNATIVE TO CERTAIN
REQUIREMENTS OF SECTION XI OF THE AMERICAN SOCIETY OF MECHANICAL
ENGINEERS BOILER AND PRESSURE VESSEL CODE FOR INSERVICE
INSPECTION (ISI) OF REACTOR VESSEL INTERNAL (RVI) COMPONENTS FOR
CLINTON POWER STATION UNIT 1
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
LASALLE COUNTY STATION, UNITS 1 AND 2
LIMERICK GENERATING STATION, UNITS 1 AND 2
OYSTER CREEK GENERATING STATION
PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

QUESTION:

- (1) In a letter dated October 1, 2003, Entergy Nuclear Operations Inc. (Entergy), the licensee of the Vermont Yankee Nuclear Power Station (VYNPS), submitted a similar relief request in which the licensee proposed to implement the BWRVIP guidelines in lieu of ASME Section XI requirements for the VYNPS's RVI components. In a supplemental letter dated January 22, 2004, (ADAMS-Accession Number ML040690734), Entergy submitted details of the inspections for the RVI components that are consistent with the BWRVIP inspection guidelines. The Nuclear Regulatory Commission (NRC) staff, in its safety evaluation (SE) dated September 19, 2005, approved the VYNPS's relief request.

The NRC staff requests that the licensee (Amergen-Exelon) provide inspection requirements and inspection frequencies for the following units similar to those addressed in VYNPS's (Agency wide Document Access and Management System (ADAMS) Accession No. ML040690734). This information will enable the staff to perform an effective review of the BWRVIP inspection criteria that will be implemented by the licensee.

- (1) Clinton Power Station, Unit No. 1
- (2) Dresden Nuclear Power Station, Units 2 and 3
- (3) LaSalle County Station, Units 1 and 2
- (4) Limerick Generating Station, Units 1 and 2
- (5) Oyster Creek Generating Station
- (6) Peach Bottom Atomic Power Station, Units 2 and 3
- (7) Quad Cities Nuclear Power Station, Units 1 and 2

RESPONSE:

Attachment 2 contains the "Inspection Histories" for each of the Exelon/AmerGen BWR facilities listed above. These summaries provide, on a component-by-component basis, the inspection methods utilized, the inspection frequency to date, and the results of the inspections.

QUESTION:

- (2) Deleted

RESPONSE:

N/A

QUESTION:

- (3) Identify whether the following RVI components in each of the units specified in question (1) have previously experienced cracking due to stress corrosion cracking (SCC), intergranular stress corrosion cracking (IGSCC), irradiation-assisted stress corrosion cracking (IASCC) or cyclic loading and identify the extent of cracking. Also provide information regarding the inspection methods and inspection frequencies that were used thus far, and the corrective actions that were taken when degradation was identified in these RVI components.

- (1) Core plate hold-down bolts
- (2) Top guide grid beams and hold-down assemblies
- (3) Core shroud welds
- (4) Core shroud support welds
- (5) Core spray piping
- (6) Core Spray nozzle and thermal sleeve
- (7) Core spray spargers
- (8) Jet pump assembly and Jet pump beams
- (9) Jet pump diffuser
- (10) Jet pump riser welds and thermal sleeves
- (11) CRD guide tube
- (12) CRD stub tube
- (13) In-core housing
- (14) Dry tube
- (15) Instrument penetrations
- (16) Vessel ID brackets
- (17) LPCI couplings
- (18) Fuel support castings
- (19) CRD nozzle
- (20) Steam dryer
- (21) Moisture separator
- (22) Surveillance capsule specimen holder
- (23) Lower plenum
- (24) Feed water sparger

RESPONSE:

Refer to the "Inspection Histories " (Attachment 2), for the inspection frequencies to date, methods, and results. This table also contains the identified corrective actions. The information provided reflects the compilation of the BWRVIP 120 day reports. Corrective actions and inspections performed prior to the BWRVIP were implemented to the requirements of ASME Section XI, as applicable.

QUESTION:

- (4) The NRC staff requests that the licensee identify whether there are any furnace-sensitized stainless steel vessel attachment welds associated with the RVI components in the plants identified in question (1). It is requested that the licensee provide an explanation regarding the type of inspection program and any additional augmented inspection program that are implemented for any existing furnace-sensitized stainless steel attachment welds in these BWR units.

RESPONSE:

Exelon/AmerGen BWR plants have developed inspection programs for reactor vessel interior attachments in accordance with BWRVIP-48-A, "Vessel ID Attachment Weld Inspection and Flaw Evaluation Guidelines". This BWRVIP Inspection and Evaluation Guideline contains inspection requirements for both non-sensitized and furnace-sensitized interior attachment welds. The furnace-sensitized welds require an EVT-1 versus a VT-3 or VT-1 (depending on location), for the non-sensitized welds. Each Exelon/AmerGen BWR plant follows the appropriate inspection requirements for their respective attachment welds. Accordingly, there are no additional augmented inspections performed on interior attachment welds beyond those specified in BWRVIP-48-A.

QUESTION:

(5) In a letter dated October 7, 2005, Entergy Nuclear Operations Inc., the licensee of the James A. FitzPatrick Nuclear Power Plant, submitted a similar relief request (ADAMS Accession No. ML052900075) which included the following BWRVIP reports. To maintain consistency, the staff requests that the licensee include the following BWRVIP reports in its response, and make a commitment that it will comply with the inspection requirements specified in these reports.

- (1) BWRVIP-25, "BWR Core Plate Inspection and Flaw Evaluation Guidelines."
- (2) BWRVIP-27-A, "BWRVIP Standby Liquid Control System/Core Spray/ Core Plate Δ P Inspection and Flaw Evaluation Guidelines."
- (3) BWRVIP-138, "BWRVIP Updated Jet Pump Beam Inspection and Flaw Evaluation."

RESPONSE:

Although Exelon/AmerGen, as a member of the BWRVIP, has committed to follow the BWRVIP Guidelines, these BWRVIP reports were not listed in the original relief request since they were considered to be unrelated to ASME Section XI Code Examination Categories B-N-1 and B-N-2, which are the categories of the Code from which relief is being sought. Exelon/AmerGen continues to consider the reports to be unrelated to the ASME Section XI code examination Categories B-N-1 and B-N-2. However, for consistency with similar relief requests, these reports are listed in the revised relief request (Attachment 3). Wording in Attachment 3, "Proposed Alternative", has also been revised to reflect this point.

QUESTION:

(6) The NRC staff requests that the licensee confirm whether NUREG-0619, "BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking," will be used for the inspection of feedwater sparger tee welds and feedwater sparger piping brackets.

RESPONSE:

Exelon/AmerGen BWR plants inspect the Feedwater spargers in accordance with the Alternate BWR Feedwater Nozzle Inspection Program, GE-NE-523-A71-0594-A, Rev. 1. This alternate program was approved for use by BWR facilities in the NRC Safety Evaluation dated March 10, 2000, "Final Safety Evaluation of BWR Owner's Group Alternate Boiling Water Reactor (BWR) Feedwater Nozzle Inspection (TAC No. MA6787)." This alternative program requires a visual inspection of the

Feedwater sparger (including the tee welds and end brackets) at a specific frequency, depending on thermal sleeve / sparger design, that is the same as the inspection requirements of NUREG-0619.

QUESTION:

- (7) In Table 1 of Attachment A of the submittal dated April 19, 2007, the licensee indicates that VT-3 inspection will be performed per the BWRVIP-48 report, "BWR Vessel Internal Project, Vessel ID Attachment Weld Inspection and Flaw Evaluation Guidelines," on the lower surveillance specimen holder bracket welds that are within the beltline region. However, Table 3-2 of the BWRVIP-48 report requires VT-1 examination per Table IWB-2500-1, Item Number B13.20 of ASME Section XI. Therefore, the NRC staff requests that the licensee revise Table 1 of Attachment A of the submittal dated April 19, 2007, to substitute VT-1 for VT-3 for the lower surveillance specimen holder bracket welds that are within the beltline region.

RESPONSE:

The Table 1 of Attachment 3 has been corrected to reflect the VT-1 visual inspection method.

QUESTION:

- (8) In Table 1 of Attachment A of the submittal dated April 19, 2007, the licensee indicates that the shroud support leg weld (H12) will be inspected per the requirements specified in the staff's SE for the BWRVIP-38 report, "BWR Vessel Internal Project, BWR Shroud Support Inspection and Flaw Evaluation Guidelines." However, the staff's final SE for the BWRVIP-38 report indicates that when inspection tooling and methodologies are developed that allow the welds in the lower plenum to be accessible, the guidelines will state that the licensee will inspect these welds with the appropriate non-destructive examination (NDE) methods in order to establish a baseline for these welds. Consistent with these requirements, the NRC staff, therefore, requests that the licensee revise Table 1 of Attachment A of the submittal dated April 19, 2007, to include a commitment that the shroud support leg weld H12 will be inspected with the appropriate NDE methods in order to establish a baseline for these welds when the inspection tooling and methodologies permit such an inspection.

RESPONSE:

As stated in Section 5 ("Proposed Alternative") of Attachment A to the relief request, "In addition, where BWRVIP guidance in existing BWRVIP documents has been supplemented or revised by subsequent correspondence approved by the BWRVIP Executive Committee, the most current BWRVIP approved guidance will be implemented". This is part of the basic commitment to utilize the BWRVIP guidelines that Exelon/AmerGen and all domestic BWR facilities have made. A footnote has been added to Table 1 of Attachment 3 to emphasize this point.

QUESTION:

- (9) Top guide grid beams are prone to IASCC when they are exposed to a neutron fluence value greater than 5×10^{20} n/cm² (E >1 MeV). Top guide grid beams could be exposed to a neutron fluence value greater than this threshold value where by the probability of multiple failures of top guide grid beams is enhanced. Therefore, the NRC staff requests that the licensee provide the method of inspection and inspection frequency for the BWR units' top guide grid beams that may potentially be exposed to a neutron fluence value greater than the threshold value during the current ISI interval.

RESPONSE:

Currently, Exelon/AmerGen BWR facilities perform inspection of the Top Guide Assembly in accordance with BWRVIP-26-A, "BWR Top Guide Inspection and Flaw Evaluation Guidelines". However, there are no current programs for inspection of the grid beams. AmerGen's Oyster Creek plant also performs additional inspections of the top guide since indications have been identified on the grid beams. The BWRVIP is presently working on updated guidance for inspection of the Top Guide, which focuses on grid beam inspections. When approved by the BWRVIP Executive Committee, Exelon and AmerGen plants will implement these new requirements.

QUESTION:

- (10) Section 4.1 item 5 of the BWRVIP-100-A report, "Updated Assessment of the Fracture Toughness of Irradiated Stainless Steel for BWR Core Shrouds," states that fracture toughness values of stainless steel materials that are exposed to a neutron fluence value greater than 1×10^{21} n/cm² (E > 1 MeV) are lower than those used in Appendix C of the BWRVIP-76 report, "BWR Core Shroud Inspection and Flaw Evaluation Guidelines." Identify whether the core shroud welds and base materials in the BWR units identified in question (1) will be exposed to a neutron fluence value greater than 1×10^{21} n/cm² (E > 1 MeV) during the current ISI interval.

Since the inspection frequency in the BWRVIP-76 report is based on fracture toughness values which are not consistent with the BWRVIP-100-A report, the staff requests that the licensee confirm the following:

The inspection frequency and strategy for welds that will be exposed to a neutron fluence value greater than 1×10^{21} n/cm² (E > 1 MeV) during the current ISI interval will be evaluated taking into account the lower fracture toughness values that are specified in the BWRVIP-100-A report.

RESPONSE:

Several of the core shroud welds at each of the Exelon and AmerGen facilities will experience high neutron exposure during the current ISI Interval (fluence values > 1×10^{21} n/cm² (E > 1 MeV)). The inspection frequency and strategy for welds that will be exposed to a neutron fluence value greater than 1×10^{21} n/cm² (E > 1 MeV) during the current ISI interval will be evaluated taking into account the lower fracture toughness values that are specified in the BWRVIP-100-A report if necessary, or the material subjected to these higher fluence levels will be assumed to be cracked through-wall in the engineering evaluation.

QUESTION:

- (11) According to Section 2.0 of the BWRVIP-76 report, core shroud welds shall be inspected every 6 years when the enhanced visual test (EVT-1) method is used for one-sided weld inspections, and shall be inspected every 10 years when the subject welds are examined with the ultrasonic test method. The inspection frequency for the core shroud welds (H1 through H7) as indicated in Table 1 of the submittal dated April 19, 2007, is not consistent with the aforementioned requirement. Therefore, the NRC staff requests that the licensee revise the inspection frequency requirement for the subject welds in Table 1 of the submittal.

RESPONSE:

Table 1 of Attachment 3 has been revised to comply with the BWRVIP-76 report for the welds H1 through H7 as shown on page 7.

QUESTION:

- (12) Table 2 of the submittal dated April 19, 2007, indicates that four core shroud vertical welds at the Oyster Creek Generating Station were not inspected during the 2006 refueling outage as required by the BWRVIP-76 report guidelines. The NRC staff requests that the licensee provide technical justification for not performing the scheduled inspections and its plans for performing future inspections of these welds.

RESPONSE:

As a result of the missed re-inspections, Oyster Creek has developed a "Deviation Disposition" in accordance with Exelon/AmerGen procedures. This Deviation Disposition is supported by a technical justification for performing the subject re-inspections one outage later than originally required. This Deviation Disposition was submitted to the BWRVIP as required by the guidance, and notification of the deviation was sent to the NRC on April 27, 2007 via AmerGen Letter No 2130-07-20493. Attachment 3 has been revised to reflect this submittal.

Attachment 2
Inspection Histories

REACTOR INTERNALS INSPECTION HISTORY

Plant: Clinton

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping	10/2000 (C1R07)	UT	Performed UT on the identified piping welds on both High Pressure Core Spray and low Pressure core Spray piping systems. Two flaw indications, one on each B-P2 and C-P2 welds, were identified. Evaluated for 2 cycles operation per Core Spray Flaw Evaluation Handbook. Examined welds include P2, P3a&b, P4a&b, P5 and P6.
		EVT-1	P4c and P4d. No recordable indications (NRI).
		VT-1	A&B-P8. NRI.
	2/2004 (C1R09)	UT	Performed UT of piping welds on both High Pressure and Low Pressure Core Spray systems. Two existing flaw indications, one on each BP2 and CP2 welds, were identified to have increased in length. Welds were evaluated and accepted for two additional cycles of operation. One additional flaw on weld DP2 was also identified and evaluated for two cycles of operation. No other indications identified.
		EVT-1	One weld each P4c, P4d and P8. NRI. A-PR, A-ADR, A-BDR, B-PR, B-CDR, and B-DDR piping welds. NRI.
		VT-1	A&B-P8. NRI.
	2/2006 (C1R10)	EVT-1	A-BP4c, A-BP4d, A-APB(PB1), A-BPB(PB2). NRI. A-PR, A-ADR, A-BDR, B-PR, B-CDR, and B-DDR piping welds. NRI.
	Core Spray Sparger	10/2000 (C1R07)	EVT-1 and VT-1
2/2004 (C1R09)		EVT-1 and VT-1	NRI.
2/2006 (C1R10)		EVT-1	NRI.
Attachment Welds	10/2000 (C1R07)	VT-3	Guide Rod Support Brackets, Steam Dryer Hold Down Brackets and Steam Dryer Support Brackets per ASME Section XI. NRI.
	2/2004 (C1R09)	EVT-1	Several Steam Dryer Support Brackets have contact marks and several do not. Clinton will be Monitoring this condition.
		VT-1	Surveillance Sample Brackets Section XI inspection was NRI. However, both lower tack welds on 2 of the baskets were found cracked. Evaluated for continued operation. These baskets will be evaluated again in C1R10.
	2/2006 (C1R10)	EVT-1	No change identified in Several Steam Dryer Support Bracket contact points.
		VT-1	No indications identified. Guide rods and brackets were inspected to look for any damage caused by steam separator lower bracket. NRI.
		VT-1	Inspected surveillance sample baskets at 3° and at 177° with previously identified cracks. No change was observed.
		VT-3	Lower Bracket @ 0 degrees. Inspected previously identified dent/deformation. No change identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Clinton

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections																																																												
Core Shroud	4/2002 (C1R08)	UT	<p>Performed UT of all Horizontal Welds. In addition, some vertical welds "screened-in" per BWRVIP-76 criteria.</p> <p>Coverage:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Weld Number</u></th> <th style="text-align: right;"><u>% of Examined Length</u></th> </tr> </thead> <tbody> <tr><td>H1</td><td style="text-align: right;">59.7%</td></tr> <tr><td>H2</td><td style="text-align: right;">67.4%</td></tr> <tr><td>H3</td><td style="text-align: right;">66.7%</td></tr> <tr><td>H4 upper side</td><td style="text-align: right;">100%</td></tr> <tr><td>H4 lower side</td><td style="text-align: right;">97.1%</td></tr> <tr><td>H5 upper side</td><td style="text-align: right;">19.0%</td></tr> <tr><td>H5 lower side</td><td style="text-align: right;">18.7%</td></tr> <tr><td>H6A</td><td style="text-align: right;">16.4%</td></tr> <tr><td>H6B</td><td style="text-align: right;">25.6%</td></tr> <tr><td>H7</td><td style="text-align: right;">26.5%</td></tr> <tr><td>V11</td><td style="text-align: right;">95.2%</td></tr> <tr><td>V12</td><td style="text-align: right;">95.0%</td></tr> <tr><td>V13</td><td style="text-align: right;">87.0%</td></tr> <tr><td>V14</td><td style="text-align: right;">87.0%</td></tr> </tbody> </table> <p>Flaw extents were identified as follows:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Weld Number</u></th> <th style="text-align: right;"><u>% of Examined Length Flawed</u></th> </tr> </thead> <tbody> <tr><td>H1</td><td style="text-align: right;">0%</td></tr> <tr><td>H2</td><td style="text-align: right;">0%</td></tr> <tr><td>H3</td><td style="text-align: right;">19.1%</td></tr> <tr><td>H4Upp</td><td style="text-align: right;">97.2%</td></tr> <tr><td>H4Low</td><td style="text-align: right;">74.0%</td></tr> <tr><td>H5Upp</td><td style="text-align: right;">15.3%</td></tr> <tr><td>H5Low</td><td style="text-align: right;">0%</td></tr> <tr><td>H6A</td><td style="text-align: right;">0%</td></tr> <tr><td>H6B</td><td style="text-align: right;">5.4%</td></tr> <tr><td>H7</td><td style="text-align: right;">0%</td></tr> <tr><td>V11</td><td style="text-align: right;">0%</td></tr> <tr><td>V12</td><td style="text-align: right;">0%</td></tr> <tr><td>V13</td><td style="text-align: right;">0%</td></tr> <tr><td>V14</td><td style="text-align: right;">0%</td></tr> </tbody> </table> <p>Prior to startup, an Engineering Evaluation was performed to justify ultimately two cycles of operation.</p>	<u>Weld Number</u>	<u>% of Examined Length</u>	H1	59.7%	H2	67.4%	H3	66.7%	H4 upper side	100%	H4 lower side	97.1%	H5 upper side	19.0%	H5 lower side	18.7%	H6A	16.4%	H6B	25.6%	H7	26.5%	V11	95.2%	V12	95.0%	V13	87.0%	V14	87.0%	<u>Weld Number</u>	<u>% of Examined Length Flawed</u>	H1	0%	H2	0%	H3	19.1%	H4Upp	97.2%	H4Low	74.0%	H5Upp	15.3%	H5Low	0%	H6A	0%	H6B	5.4%	H7	0%	V11	0%	V12	0%	V13	0%	V14	0%
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V14	0%																																																														
	2/2006 (C1R10)		4 Tie Rods installed in 2/2006 (C1R10). Inspection performed as required by BWRVIP-76. NRI.																																																												
Shroud Support	10/2000 (C1R07)	EVT-1	EVT-1 of H8 and H9 welds for >10% length per BWRVIP-38. No indications identified.																																																												
	2/2004 (C1R09)	UT	UT of H9 weld for 100% length from outside the Reactor wall. No indication was identified.																																																												
		VT-1	VT-1 examined the Access Hole Cover assembly per GE SIL 462. No indications identified.																																																												
	2/2006 (C1R10)	EVT-1	H8 Weld No indications identified.																																																												
SLC	NA		Injection is through Core Spray																																																												

REACTOR INTERNALS INSPECTION HISTORY

Plant: Clinton

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly	10/2000 (C1R07)	EVT-1	Performed EVT-1 of 50% of the High Priority RS-3 welds. NRI.
	4/2002 (C1R08)	EVT-1	Performed EVT-1 of 50% of the Medium Priority RS-1 welds. NRI.
	2/2004 (C1R09)	EVT-1	Performed EVT-1 of remaining 50% of High Priority RS-3 welds. NRI.
			50% of Inlet Mixer IN-1 and IN-2 welds. NRI.
			50% of the Riser Brace RB-1a,b,c,d and RB-2a,b,c,d. NRI.
			50% of the RS-2, RS-6, RS-7, RS-8, and RS-9 welds. NRI.
	VT-1	50% of the WD-1 Wedge Bearing Surface, NRI.	
UT	50% of the Sensing Lines. NRI.		
2/2006 (C1R10)	VT-1	UT was performed on all 20 Diffusers with 100% coverage of welds: AD-1, AD-2, DF-1, DF-2, and DF-3. NRI.	
LPCI Couplings	4/2002 (C1R08)	EVT-1	Sample inspection of WD-1 Wedge Bearing Surfaces on four pumps. NRI.
	2/2004 (C1R09)	EVT-1	Examined Loop 'C' except weld 6-6b. NRI.
	2/2006 (C1R10)	EVT-1	Examined all welds on Loops 'A' and 'B' and weld 6-6b's on Loop 'C'. NRI.
Lower Plenum	4/2002 (C1R08)	EVT-1 or VT-3 (as applicable)	Examined Loop 'A', all welds. NRI.
			Examined seventeen (11%) per BWRVIP-47, CRDGT-1, 2, 3 and pin. NRI.
Steam Dryer	4/2002 (C1R08)	VT-3	Examined Steam dryer Drain Channel # 8 to the Skirt (V16) is now 8-3/4" in length.
		VT-3	Per SIL direction performed a "best-effort" VT-1 all banks, cover plates, end panels, hoods, drain channels, the skirt, top and tie-bars from outside.
	4/2004 (C1R09)	VT-3	The existing crack on drain channel #8 to the skirt was measured 7-5/8" (later designated V16). No change from the previous outages. Clinton has been monitoring this crack since C1R01.
		VT-1	The V16 cracking was repaired using under water welding.
	2/2006 (C1R10)	VT-1 "best effort"	All welds examined from outside.
			<ol style="list-style-type: none"> 1) An indication was observed in the drain channel base material, away from the weld. The indication appears to be a minor mechanical deformation. This indication was evaluated for continued operation. 2) Two (2) indications were observed in the dryer bank 5 horizontal weld H3. These indications are located under tie rods 28 and 30. They are 12.75" and 2.25" long. These indications were repaired by stop drilling. 3) A linear indication was observed in the dryer upper guide at 0 deg. This indication is 1.6" long. This indication was evaluated for continued operation. 4) Several linear indications were observed in the dryer upper support ring face. They are located at various locations and degrees. These were evaluated for continued operation.
			All vertical drain channel welds were reinforced from 1/8" to 1/4" during C1R10.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Clinton

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Top Guide	2/2004 (C1R09)	VT-3	Performed VT-3 of the Top Guide hold-down assembly bolts and nuts. NRI.
Vessel	10/2000 (C1R07)	VT-3	Vessel interior to ASME XI. NRI.
	2/2004 (C1R09)	VT-3	Vessel interior to ASME XI. NRI.
Nuclear Instrument Dry-tubes	4/2002 (C1R08)	VT-3	Four IRM's examined as recommended in SIL. NRI.
	2/2004 (C1R09)	VT-1	4 IRM and 4 SRM. One indication identified on SRM 'D' evaluated by GE for operating one cycle. Other tubes were NRI.
	2/2006 (C1R10)	VT-3	Four IRM, one SRM and four LPRM tubes were examined. NRI. SRM 'D' dry tube was replaced.
Steam Separator	10/2000 (C1R07)	VT-3	Examine overall condition of Steam Separator (50%). Not ASME or SIL driven. NRI.
	2/2004 (C1R09)	VT-3	Examine overall condition of Steam separator (second 50%). One minor dent identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping	1980s-D2R13	VT-1	IEB 80-13. No flaws identified.
	10/1995 D2R14	VT-1	VT-1 (1 MIL) of piping and welds in annulus. Indications observed at one lower elbow to riser weld (3P4c) and two collar to shroud pipe welds (3 and 4P8a) in 1995. All flaw lengths verified with UT. Full structural margins met on all three flawed welds for one additional cycle. No repairs performed.
	3/1998 D2R15	UT	Initiated BWRVIP-18 recommendations. Examined piping using the GE CSI-2000 UT device. Identified three previously unidentified flaws (1P5, 2P8a and 3P4d) for a total of six flaws. Previously identified flaws were determined to be of the same or less extent than originally sized. 1P5 and 2P8a were not visually verified. All flaws were analyzed for two additional cycles of operation with no repairs required.
		EVT-1	Examined undemonstrated welds P8a and P4d locations with EVT-1 to supplement UT. No additional flaws identified.
	10/2000 D2R16	EVT-1	Examined Core Spray Piping: P8a and P4d, at all four locations. Previous indications have been found on the Core Spray Elbow to Collar on the 260° Downcomer. The noted crack growth was bounded by the previous flaw evaluation and the BWRVIP-18 crack growth value.
	10/2001 D2R17	UT, EVT-1	GE CSI-2000 inspected a complete Target Set and a sample of P4 welds. No new flaws. Growth within Fracture Mechanics Evaluation predictions. Performed EVT-1 of undemonstrated welds.
	10/2003 D2R18	EVT-1	Examined undemonstrated welds P8a and P4d locations with EVT-1 at all four downcomer locations. Crack growth was bounded by the previous flaw evaluation.
		VT-1	Excessive grinding exam of 1-4P4a and b. Flaws are unchanged.
	11/2005 D2R19	UT	Examined a complete Target Set and a sample of P4 piping welds using the GE CSI-2000 system. No new flaws were identified. Flaws were again analyzed for two additional cycles of operation with no repairs required. Flaws were again analyzed for two additional cycles of operation, however repairs are projected to be necessary after D2R21.
		EVT-1	Examined undemonstrated welds P8a and P4d locations with EVT-1 to supplement UT. No new flaws identified. EVT-1 25% (2) piping bracket assembly welds. NRI.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger	1980s to D2R15	VT-1	IEB 80-13 VT-1 of spargers and tee-boxes. NRI.
	3/1998 D2R16	EVT-1 (CSVT-1), VT-1	Initiate BWRVIP-18 recommendations. Examined 100% of tee-box cover plate welds (S1), tee-box to sparger arms (S2), and sparger end caps (S4) and brackets (SB) to EVT-1. NRI. Examined spargers nozzles (S3a and b) and the sparger piping to VT-1. NRI.
	10/2001 D2R17	EVT-1, VT-1	EVT-1 100% S1; S2a, b; S4a, b. NRI. VT-1 50% S3a, b. NRI. VT-1 100% (12) SB. NRI.
	11/2005 D2R19	EVT-1, VT-1	EVT-1 100% S1; S2a, b; S4a, b. NRI. VT-1 50% S3a, b. NRI. VT-1 100% (12) SB. NRI.
Attachment Welds	4/1994 D2R15	VT-1	Section XI inspections of jet pump riser brace, dryer, feedwater sparger, core spray, and surveillance capsule holder brackets, performed once per interval. NRI
	3/1998 D2R16	MVT-1	Inspected Core Spray Brackets per BWRVIP recommendations. NRI.
	10/2000 D2R17	VT-1	100% (6) Surveillance Capsule Bracket lower attachments. NRI.
		VT-3	100% (4) Dryer Lugs. NRI. 100% (6) Guide Rod Attachments. NRI. 100% (6) Surveillance Capsule Bracket upper attachments. NRI.
	10/2003 D2R18	EVT-1	EVT-1 100% (4) Dryer Lugs. NRI. Eight Core Spray piping bracket welds. NRI. Eight feedwater sparger end-brackets. NRI.
		VT-1	Eight feedwater sparger end-brackets. NRI.
	11/2005 D2R19	EVT-1	EVT-1 100% (8) feedwater sparger end bracket to vessel attachments. NRI. EVT-1 100% (8) feedwater sparger end bracket pin tack weld. NRI. EVT-1 25% (2) core spray piping bracket to vessel attachments. NRI. EVT-1 100% (4) steam dryer wall support lugs. NRI.
		VT-1	VT-1 100% (8) feedwater sparger end bracket lug. NRI. VT-1 feedwater sparger repair at 240°. RI. Hole in the weld of the repaired nozzle. Accepted as-is.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	8/1995 D2R14	EVT-1 and UT	Performed examinations per BWRVIP Guidelines of all shroud repair design reliant structures prior to installation of the shroud repair). Inspection of shroud consisted of EVT-1 of all ring segment welds (accessible surfaces), EVT-1 of between 43% and 72% of the length of each vertical weld between H1 & H2 from OD surface (ID not accessible), UT of between 30% and 50% of the length of each of the 6 beltline vertical welds, EVT-1 of between 43% and 72% of the length of 2 of the 3 vertical welds between H6 & H7 from OD surface (ID not accessible), and UT of 35% of the length of the remaining vertical weld between H6 and H7. NRI.
		NA	Installed repair hardware(4 GE designed tie-rod assemblies) to structurally replace the shroud horizontal welds H1 through H7.
	03/1998 D2R15	VT-1, VT-3	Shroud repair hardware inspected per GE recommendations. NRI.
	10/1999 D2R16	UT/EC	Examined shroud vertical welds V14, V15, V16, V17, V18, and V19 using the TEIDE 2 manipulator per BWRVIP-76 for a repaired shroud. This tool employs both ultrasonic and eddy current probes. NRI. Obtained coverages were: V14: 80.1% V15: 80.1% V16: 83.4% V17: 52.6% V18: 62.8% V19: 58.0%
	10/2001 D2R17	EVT-1	Performed one-sided EVT-1 of all vertical welds outside of the beltline with 100% coverage including welds V5, V6, V7, V26, V27 and V28. NRI.
	11/2005 D2R19	EVT-1	Examined 100% (16) Ring Segment Welds from the OD. NRI. Coverage was 100% except for the following: V9: 85% V11: 95% V20: 0% (inaccessible due to JP diffuser) V21: 90% V24: 0% (inaccessible due to JP diffuser) Attempted EVT-1 of shroud vertical welds V29, V30, V31, V32. These welds are located below H7 and are beyond the scope of BWRVIP-76. 0% coverage was achieved due to Jet Pump interference.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
		VT-1 and EVT-1	<p>Performed 10 year shroud tie rod examination of all four tie rods consistent with GE recommendations and considering industry experience:</p> <ul style="list-style-type: none"> • EVT-1 of the clevis pin to verify if bottomed in slot and checking contact area for movement. NRI. • VT-1 of stabilizer assembly contact between the RPV wall and upper contact, mid support, and lower contact. RI @ 20 and 110 degrees. Accepted as-is. • VT-1 of retainer devices at lower support, lower spring to tie-rod connection, upper spring jacking bolts and tie rod nut. NRI. • VT-1 of contact of the stabilizer assembly between the shroud and upper and lower springs. NRI. <p>VT-1 of the core plate wedge contact. NRI.</p>
Shroud Support	3/1993 D2R13	UT	UT examined shroud support plate for radial flaws around thin creviced Access Hole Covers. Performed prior to replacement. NRI.
		NA	Access hole cover proactively replaced with GE mechanical design.
	8/1995 D2R14	EVT-1	EVT-1 of H8 and H9 for approx 12" at 4 locations of shroud repair hardware attachment areas. NRI.
		VT-1	VT-1 of both replacement access hole cover assemblies. NRI.
	10/1999 D2R16	EVT-1	Initiate BWRVIP-38 recommendations for Core Support Structures. Examined H8 and H9 welds. NRI.
	10/2003 D2R18	VT-1	VT-1 of both replacement access hole cover assemblies. NRI.
	11/2005 D2R19	EVT-1	EVT-1 H8 & H9 from 132-177°. NRI.
VT-3		VT-3 H9 100% accessible areas. NRI.	
SLC	11/2005 D2R19	Enhanced VT-2	Safe end and nozzle examined. NRI.
Jet Pump Assembly	8/1995 D2R14	VT-1	<p>Hold down beams, beam bolt keepers, lock-plates and retainers; restrainer wedges, stops, and adjusting screws, clamp bolts and keepers; riser brace assemblies, adapters and baffle plate welds, sensing lines and sensing line brackets per various SILS. Latest inspections were in 1995, with no reportable indications (NRI). Inspect 100% every other (even numbered) outage.</p> <p>Diffuser to baffle plate welds on all 20 jet pumps. NRI.</p>
	3/1998 D2R15		EVT-1 examined Jet Pump Riser Welds RS-1, 2, 3, 4 and 5 on OD on all ten risers. Riser to JP Pair 15/16 has 1-1/2" long crack in elbow HAZ at RS-1. Evaluated for two cycles of operation without repair. NRI all others.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	10/1999 D2R16	EVT-1	Initiated sample examinations per BWRVIP-41 including High and Medium Priority welds on the Riser Braces, Restrainer Brackets, and Mixers. Minor Indications were noted that did not require repair. JP Diffuser EVT-1 High/Med Priority welds per BWRVIP-41 sample and inspection requirements. NRI
		VT-1	Initiated sample examinations per BWRVIP-41 on Inlet bolting and main wedges (WD-1). NRI.
	10/2001 D2R17	EVT-1	Examined a sample of RB-4 welds (Riser Brace Leaf at RPV). Identified JP#9, upper Rb 4 weld cracked. Scope expanded to 100%. No other indications. Measured known RS-1 crack on riser 15/16. No change in last two cycles.
		VT-1	Examined restrainers for set-screw gaps. NRI.
	10/2003 D2R18	UT	This outage's scope completes the first 6 Year BWRVIP-41 Inspection Interval. Examined Jet Pumps # 2, 3, 4, 5, 8, 9, 12, 13, 14, 15, 18 and 19 with the Areva UT device. NRI
		VT-1	VT-1 100% (20) WD-1. NRI. VT-1 100% (8) Jet Pump Sensing Line Clamps. RI (2). Teeth not fully engaged. Accepted as-is.
		VT-3	VT-3 100% (20) Jet Pump Bream Tooth Engagement. NRI.
		EVT-1	Measured flaw on JP#15/16 RS-1. No change in length. Identified pup piece present on JP#5/6.
			EVT-1 of the last of the Medium Priority 50% sample also completed. NRI.
		NA	Installed 19 Riser Brace Mitigation clamps and one Riser Brace Repair clamp on JP#9.
	11/2005 D2R19	EVT-1	Examined sample of RS-1, 2, 3, 4 and 5. RI on JP15/16 RS-1 verified no change since last inspection. Examined AS-1, 2 on JPs 8, 9 and AS-1 on JP 19. NRI.
		VT-1	Examined 100% WD-1. NRI. Examined 100% JP Sensing Line Clamps. RIs (2) for ratchet teeth engagement. Accept as-is. Examined 100% JP Riser Brace Clamps. RIs (8) for ratchet teeth engagement. Accept as-is. JP 11 Aux wedge on vessel side. NRI
Jet Pump Beams	8/1995 D2R14 and prior	UT	Jet pump beams have been UT examined each outage using technique capable of detecting cracking at throat and ears. One beam found cracked at ear in 1995 and was replaced.
	3/1998 D2R15	UT	UT examined 100% of Jet Pump Beams, NRI.
	10/1999 D2R16	UT	UT examined 100% of Jet Pump Beams, NRI.
	10/2001 D2R17	UT	UT examined 100% of Jet Pump Beams, NRI.
	10/2003 D2R18	NA	Replaced all 20 Jet Pump Beams with Group 3 weldless keeper beams.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	11/2005 D2R19	VT-3	Examined 100% of JP beams for ratchet tooth engagement. NRI.
LPCI Couplings	NA		
Lower Plenum	8/1995 D2R14	VT-1	11 CRD guide tube lower assembly welds, 2 CRD guide tube upper assembly welds, and 4 CRD guide tube alignment ear welds, NRI. 14 CRD housing to CRD stub tube welds, 14 CRD stub tube to RPV bottom head welds, 3 CRD housing tube to housing cap welds, NRI. 4 incore guide tube to housing welds, 4 incore housing to RPV bottom head welds, 4 incore guide tube stabilizers, NRI.
	10/2001 D2R17	EVT-1 and VT-3	5% inspected (9) per BWRVIP-47, CRDGT-1,2,3 and pin, NRI.
Steam Dryer	10/2003 D2R18	VT-1 "best effort"	Performed inspections in accordance with the guidance in SIL 644 S1. Several RIs were identified requiring modification to the outer hoods as well as repairs to several tie bars.
	11/2005 D2R19	VT-1 "best effort"	Performed BWRVIP-139 required inspections as well as inspections of high-stress areas as determined by GE models. Internal start-up instrumentation piping was also examined. Several RI were identified including Four of six gusset feet tip (adjacent to R2 weld), ranging from 7 to 11.5". Cracking was ground out and a weld repair performed. Gusset feet extensions were designed and installed to transfer the stress riser to the mid-support ring. Vertical guide cracking (2) at 220°. Both cracks (2.5-5" in length) were stop-drilled. Remainder of indications were accepted as-is for one cycle of operation.
Top Guide	8/1995 D2R14	VT-1	Examine beam surfaces around cell in five cells, all four alignment assemblies, and rim to bottom plate weld at the four alignment assembly locations. NRI.
	10/1999 D2R16	EVT-1	Initiated BWRVIP-26 recommendations. Examined Top Guide Alignment Pins at 90° and 270° and Rim to Lower Plate Weld. NRI.
	10/2003 D2R18	EVT-1, VT-1	Examine the alignment assemblies at 0°, 180° and 270° welds (EVT-1) and alignment pin (VT-1), NRI.
	11/2005 D2R19	EVT-1	Top guide rim weld at 235° on the outboard side of cell 03-30. NRI.
Vessel	10/2001 D2R17	UT	Examined vertical welds SC1A, SC1B, SC1D, SC2D, SC3C, SC3D, SC3E, SC4A, SC4B, SC4C, SC4D, SC4E AND SC4-FLG, NRI.
	10/2003 D2R18	UT	Examined vertical welds SC1C, SC2A, SC2B, SC2C, SC3A, SC3B, NRI.
	10/2001 D2R17	VT-3	Examined vessel cladding from the steam dam to the vessel flange, NRI.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	11/2005 D2R19	VT-3	Examined vessel cladding from the steam dam to the vessel flange, NRI.
Nuclear Instrument Dry-tubes	8/1995 D2R14	VT-1	Examined SRM and IRM dry tubes, NRI.
	10/1999 D2R16	VT-1	Examined 3 IRM dry tubes. NRI.
Steam Separator	11/2005 D2R19	VT-1	Examined shroud head bolt pin and window condition. RI identified minor wear that was evaluated as-is for continued operation. Examined eight standpipe to shroud head welds and eight gusset to ring welds, NRI.

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Dresden 3**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping	1980's Through 1994	VT-1	IEB 80-13 (1 MIL) VT-1 of piping and welds in annulus. Indications observed at two lower elbow to pipe welds 2P4c and 4P4c. These welds were repaired using GE designed clamps.
	4/97-R14	UT/EVT-1	UT Baseline inspections per BWRVIP-18 of all piping circ welds in annulus. Repairs removed and not reinstalled. EVT-1 of any piping welds in annulus inaccessible to scanner. Additional flaws identified on 1, 2 and 3P8a welds.
	2/99-R15	EVT-1	EVT-1 examined undemonstrated welds P8a and P4d on all four downcomers. Installed a "bumper" repair on 1P8a at the 80° downcomer.
	9/00-R16	UT/EVT-1	UT of "Target" welds and EVT-1 of all undemonstrated welds. Also EVT-1 of welds made inaccessible from repair installed on the 80° downcomer including 1P7, 1P4c, 1P4d, 1P8a and b. Welds 2P4c and 4P4c exhibited flaw growth as predicted by Flaw Evaluation.
	10/02-R17	VT-1	Six P4 welds for presence of "excessive grinding". NRI. All undemonstrated welds P8a and P4d and long seams on thermal collars, NRI
	10/04 – R18	EVT-1	Examined piping welds 1P1, 2P1, 1P2, 2P2, 1P3, 2P3, 3P3, 4P3, 2P4a, 2P4b. Eight Core Spray Piping brackets, attachment weld, pad surface and HAZ of cladding. NRI.
		NA	Performed Core Spray Lower Sectional Replacement (all four downcomers) eliminating welds 1-4P4c, 1-4P4d, 1-4P8a, 1-4P8b, 1-4P5, 1-4P6, 1-4P7.
	11/06 – R19	VT-1/VT-3	Core Spray Lower Sectional Replacement - VT-1 of all accessible bolting, keepers, ratchets and latch springs. NRI - VT-3 of all repair hardware. NRI
		EVT-1	Examined piping welds: 1P1, 2P1, 1P2, 2P2, 1P3, 2P3, 3P3, 4P3, 3P4a, 3P4b and two piping brackets, attachment weld, pad surface and HAZ of cladding. NRI.
	Core Spray Sparger	1980's Through 1994	VT-1
4/97-R14		EVT-1, VT-3	Examined tee-box cover plate welds (S1), tee-box to sparger arms (S2), and sparger end caps (S4) to EVT-1. NRI. Examined spargers nozzles (S3) and the sparger piping to VT-3. NRI.
10/00-R16		EVT-1, VT-3	Per BWRVIP-18: EVT-1 of all S1, S2 and S4. VT-1 of 50% of S3. NRI.
10/04 – R18		EVT-1	Sparger to End Cap Welds: 1S4 (7°), 1S4 (183°), 2S4 (7°), 2S4 (183°), 3S4 (3°), 3S4 (187°), 4S4 (3°), 4S4 (187°). NRI.
		VT-1	Nozzle Tack Welds: 3S3 (187-260°), 3S3 (260-003°), 4S3 (187-290°), 4S3 (290-003°). NRI.
			-All 12 sparger brackets and bracket to shroud welds. NRI. -Core Spray Lower Sectional Replacement (all four downcomers) eliminating inspection of the following welds: 1-4S1, 1-4S2a-b.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden 3

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Attachment Welds	4/94-R13	VT-1	Section XI inspections of jet pump riser brace, dryer, feedwater sparger, core spray, and surveillance capsule holder brackets, performed once per interval. NRI.
	10/00-R16	VT-1	ASME Section XI B-N-2, surveillance capsule holder attachments in beltline. All six sets examined. NRI.
	10/02-R17	EVT-1	BWRVIP-48 attachments: four dryer lugs, eight feedwater sparger end-brackets, eight Core Spray Piping brackets, attachment weld, pad surface and HAZ of cladding. NRI
	10/04 – R18	EVT-1	Four steam dryer wall support lugs, lug to pad, and pad to vessel attachment welds. Eight feedwater sparger lug to vessel attachment welds. NRI.
		VT-1	Eight feedwater sparger end-bracket lug assemblies. NRI
	11/06 – R19	VT-3	Examined attachment welds for two Core Spray piping brackets and all four steam dryer wall support lugs in accordance with ASME Section XI. NRI
		EVT-1	Inspected piping bracket to piping weld and bracket to vessel attachment weld on 2 core spray piping brackets. NRI
		VT-1	Inspected all of the end bracket pins for tack weld and pin wear. RI – Wear identified between head of pin and bracket on four brackets. Justified operation for one cycle. Inspected sparger repair hardware from D2R18 isokinetic probe retrieval. NRI
	Core Shroud	4/94-R13	EVT-1 and UT
4/97-R14		EVT-1 and UT	Inspected all shroud repair design reliant structure prior to installation of comprehensive repair (4 GE designed tie-rod assemblies). Inspections consisted of EVT-1 of all ring segment welds (accessible surfaces), UT for minimum ligament of all vertical welds accessible to scanner and EVT-1 for minimum ligament on all accessible surfaces of all vertical welds not accessible to the scanner.
		NA	Installed four tie-rod shroud repair assemblies and four core plate wedges.
2/99-R15		VT-1	Examined all four tie-rod assemblies and core plate wedges at locations specified by the manufacturer (GE).
10/00-R16		UT	Examined a 40° segment of H4 to assist in shroud qualification of Core Spray Repair. NRI.
10/04 – R18		EVT-1	Examined Ring Segment Welds V1-V4 (Shroud Head RSWs), V8-V13 (Top Guide RSWs), and V20-V25 (Core Plate Support RSWs). Historical indications at V23 and V25 revealed no apparent change since last inspection in R14 (indications are not in HAZ. All other RSWs NRI.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden 3

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	11/06 – R19	UT	GE utilized the Telescoping Shroud Scanner to perform UT on Shroud vertical welds V5-V6, V14-V19, V26-V28. Coverage obtained as follows: V5 – 80.4% V6 – 34.8% V14 – 66.8% V15 – 75.6% V16 – 80.4% V17 – 77.9% V18 – 95.5% V19 – 69.8% V26 – 13.7% V27 – 69.4% V28 – 57.6% One indication identified on V27 (1.8" in length). Indication acceptable for continued operation in accordance with BWRVIP-76.
		EVT-1	Performed one-sided EVT-1 examinations on vertical welds. NRI. Coverage as follows: V7 – 40% V29 – 40% (between H7 and H8 welds) V30 – 0% (between H7 and H8 welds) V31 – 30% (between H7 and H8 welds) V32 – 0% (between H7 and H8 welds)
		VT-3, EVT-1	Performed GE recommended inspections of shroud repair hardware. Scope included inspections to address susceptible areas based on indications found at Hatch. One RI identified due to retainer clip not engage. This retainer clip is redundant and did not require repair.
Shroud Support	4/94-R13	UT/VT-1	Access hole cover VT/UT for circ and radial flaws. NRI.
	4/97-R14	EVT-1	Examined H8 and H9 for about 12" at 4 locations of shroud repair hardware attachment areas. NRI.
	2/99-R15	EVT-1	Per BWRVIP-38: Examined H8 and H9 between Jet Pumps 20 and 1 (312°-357°). NRI. Requirements for this inspection cycle are satisfied. NRI.
	10/02- R17	EVT-1	Welds on Access Hole Covers at 155° and 335°. The D3 AHC's have not been repaired. NRI.
	10/04 – R18	EVT-1	Examined H8 and H9 between Jet Pumps 10 and 11 (132°-177°). NRI.
	11/06 – R19	EVT-1, VT-3	VT-3 of accessible areas of H9 and EVT-1 of 10% of H9 (between Jet Pumps 10 and 11). NRI.
SLC	10/02 - R17	PT	PT of surface of Safe-end extension and safe-end to nozzle weld. NRI.
	11/06 – R19	PT	PT of surface of Safe-end extension and safe-end to nozzle weld. NRI.
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 including beam retainers every other outage.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden 3

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	4/94-R13	VT-1	Riser brace arm to yoke welds on three upper (secondary) riser braces found cracked. Repairs are not required. No other reportable indications. Diffuser to baffle plate welds on all twenty jet pumps. NRI.
	4/97-R14	EVT-1	All ten RS-1, 2, 3, 4 and RS-5. NRI.
	2/99-R15	EVT-1	Initiate BWRVIP-41: Medium Priority: 50% of DF-1, MX-1, MX-3 and IN-5 welds. All twenty RB-1, 2, RS-8 and RS-9. NRI. High Priority: 50% of DF-2, AD-1, 2 and 3. NRI.
		VT-1	Examined all twenty WD-1 locations. NRI.
	10/02-R17	EVT-1	Repeat examination of four DF-2 welds to improve coverage. NRI. Five RS-9 and 10 riser to secondary brace yoke welds, NRI. Eleven secondary brace RB-3 welds per ASME XI and BWRVIP-48. NRI.
		VT-1	Verified acceptable restrainer set-screw gaps when replaced beams (reference Jet Pump Beams section of this report). Aux wedges installed two set-screw locations. The other locations were NRI.
	10/04 – R18	VT-1	Examined jet pump sensing line clamps on jet pumps 1, 2, 3, 10, 11, 12, 13, & 20.
		EVT-1	Examined all twenty WD-1 locations. Noted normal movement of wedges 11 & 20 with no abnormal wear. All other wedges NRI.
			Examined AS-1 (set-screw gaps) on five jet pumps: 8 (Vessel Side, Shroud Side), 9 (VS,SS), 11 (SS), 12 (VS,SS), 20 (VS,SS). No unacceptable gaps were identified (all less than 0.010").
			Examined AS-2 (set-screw tack welds) on five jet pumps: 8 (VS, SS), 9 (VS,SS), 11 (SS), 12 (VS, SS), 20 (VS,SS). Lack of fusion of tack welds was identified on jet pumps and set screws: 9 (VS), 11 (SS), & 13 (VS). Indications noted on the tack welds for 9 and 13 were accepted as-is for one-cycle. Jet pump 11 had a set screw missing from its housing. The set-screw was retrieved and an auxiliary wedge was installed. Also discovered during the inspection of jet pump 11 was a poor quality tack weld on the swing-gate keeper. The condition of the bolt keeper was accepted for one cycle.
			The auxiliary wedge installed during D3M09 on jet pump 13 was examined and historical cracking was re-identified on the set screw mounting block. This indication is historical and was caused by the ejection of the inlet-mixer following the failure of a beam-bolt. The indication has been accepted as-is. Also discovered on jet pump 13 was a gap between the vessel side restrainer bracket and the swing gate. The condition of the bracket and swing gate was accepted for one cycle.
			Examined RS-10 & -11 on jet pumps: 2, 3, 4, 12, & 13. NRI. Examined RS-1, 2, & 3 on five jet pump pairs: 1/2, 3/4, 9/10, 11/12, 13/14. NRI.

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Dresden 3**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
		UT	Examined MX-3a&b, DF-1, -2 & -3 and AD-1, -2 on jet pumps: 2, 3, 4, 5, 8, 9, 12, 13, 18, & 19. NRI.
	11/06 – R19	EVT-1	Examined RB-1 & 2 on jet pumps: 1, 2, 3, 4, & 20. NRI Examined RS-4 & 5 on jet pump pairs: 9/10, 11/12, 13/14. NRI Examined RS-8 & 9 on jet pump pairs: 1/2, 3/4, 5/6. NRI Examined MX-1 and IN-5 on jet pumps: 1, 2, 3, 4, 5, 11, 12, 13, 14, 15. NRI
		VT-1	Examined aux wedge on JP 11. RI for slight wear on JP 11 aux wedge. Justified continued operation for one cycle. Examined main wedge WD-1 on JPs 1, 2, 3, 4, and 11 for wedge wear. NRI.
		NA	- Installed new ratchet style swing gate on JP 11 to address degraded keeper tack weld identified in R18. - Staked threads due to cracked tack welds (found in D3R18) and installed aux wedges on JP 9 vessel side and JP 13 vessel side set screws.
Jet Pump Beams	4/94-R13	UT	Jet pump beams are UT examined each outage using technique capable of detecting cracking at throat and ears. Original group 1 beams.
	4/94-R14	UT	Examined all beams. Two beams with indications replaced. Balance NRI.
	2/99-R15	UT	Examined all beams. NRI.
	10/00-R16	UT	Two beams with indications replaced with group 2 style beams. Balance NRI.
	03/03-D3M09	NA	Replaced all 17 original beams with weld-less keeper group 3 beams.
	10/04 – R18	VT-3	Examined 17 group 3 beam bolt retainer mechanisms (weld-less keeper) to ensure all keepers were engaged. NRI.
	10/04 – R18	EVT-1	Examined 3 (not replaced in D3M09) welded keeper style beams. BB-1 and BB-2 on Jet Pumps 5, 8, and 13. NRI.
	11/06 – R19	NA	Pre-emptively replaced ageing beams on JPs 5, 8 and 13 rather than UT examine.
LPCI Couplings	NA		
Lower Plenum	4/97-R14	MVT-1	CRD Stub Tube, CRD H7. NRI.
	4/97-R14	MVT-1	ICH/RPV-1 and ICHGT/ICH-1, two inspected from cell H7. NRI.
	10/00-R16	EVT-1	Per BWRVIP-47: examined CRGT-1, 2 and 3 on D10. NRI.
	10/02-R17	EVT-1 and VT-3	Examined 9 CRGT-1, 2 and 3 and FS/GT-ARPIN. NRI. This completes first 5% in 6 years.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden 3

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	10/04 – R18	VT-3	Bottom Head Drain cleaning project created access for the following examinations: - Examined eight Stub Tube to Vessel Welds (ST/RPV-1) and eight Stub Tube to CRD Housing Welds (CRDH/ST-1) in cells: F7, G6, G7, G8, H7, H8, H9, J8. NRI. - Inspected two locations for Core Plate to Stiffener Plate Stitch welds: G7 & G8 beam welds. NRI. - Examined two locations for Stiffener Plate to Stiffener Rods welds: G7 and H8 beam tie rods. NRI.
Steam Dryer	10/04 – R18	“Best effort” VT-1	- Examined exterior surfaces including outer hoods, historical repair areas, tie bars and attachment welds, four lifting assemblies, four hold down assemblies, two man way covers, cover plates, fourteen gussets, upper ring welds, vertical guide welds, outlet plenum lower horizontal welds, outlet plenum vertical welds, and perforated plates. Multiple indications identified, including structural fatigue flaws in the outer hood areas. Outer hoods modified to repair cracking. - Examined interior surfaces including: drain channel welds, supports, vertical and horizontal plates, support ring, horizontal cross beams, and horizontal cross beam gussets. Initial start-up steam sample probe discovered missing. Probe located and retrieved from steam separator. Multiple non-structural indications also noted.
		VT-3	Examined interior and exterior skirt. Indications noted.
	11/06 – R19	“Best Effort” VT-1	Performed VT-1 inspection of outer hood welds on old dryer where previous indications had been identified and repaired. NRI.
		NA	Installed new dryer.
Top Guide	4/94-R13	VT-1	Examined beam intersections in five cells in response to industry experience. NRI.
	4/97-R14	VT-1	Per BWRVIP-26, baseline examined all four top guide alignment assemblies. NRI.
		EVT-1	Examined rim to bottom plate weld at the four aligner assembly locations. NRI.
	10/00-R16	VT-1	Examined 0° and 270° top guide alignment assemblies. NRI.
		EVT-1	Examined rim weld 11. NRI.
	10/04 – R18	VT-1	Examined 90° and 180° top guide alignment assemblies. NRI.
		EVT-1	Examined rim to bottom plate weld at 90° and 180°. NRI.
11/06 – R19	EVT-1	Examined rim weld from cell 03-34. NRI	
Vessel	10/02 – R17	UT	Examined vertical welds SC1A, SC1C, SC2B, SC3A, SC3B, SC3C, SC3D, SC4A, SC4B, SC4C, SC4D. NRI.
	10/04 – R18	UT	- Examined vertical welds SC1B, SC2A, SC2C, SC3A, SC3B. NRI. Satisfies third interval Section XI inspection requirements. - Examined two original vessel construction base metal repair areas in beltline as required by Section XI. NRI.
		VT-3	Inspected cladding in accordance with ASME Section XI. NRI.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Dresden 3

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	11/06 – R19	VT-3	Inspected the reactor vessel cladding from the shroud flange to the reactor flange in accordance with ASME Section XI. NRI
Nuclear Instrument Dry-tubes	4/94-R13	VT-1	Identified one cracked dry tube (24-37). Replaced. Examined every other outage to date. Per Reutter-Stokes recommendations, have not reached manufacturer's service life.
	11/06 – R19	VT-1	Examined two SRM and four IRM dry tubes from 3 sides to meet SIL 409. NRI
Steam Separator	10/04 – R18	VT-1	Examined shroud head bolt pin and window condition. RI identified minor wear that was evaluated as-is for continued operation. Examined eight standpipe to shroud head welds and eight gusset to ring welds, NRI.

REACTOR INTERNALS INSPECTION HISTORY

Plant: LaSalle 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping	L1R11 (2006)	UT	Re-sized flaws on BP4a, DP5, and DP6. Flaw evaluation performed and welds scheduled for examination in L1R12.
	L1R11 (2006)	EVT-1	Visual examination of those core spray piping welds for which UT technique is not demonstrated. No indications.
	L1R10 (2004)	UT	Ultrasonic examination of 34 welds for which the UT technique is demonstrated. Re-sized flaws on BP4a, DP5, and DP6. Flaw evaluation performed and welds scheduled for examination in L1R11.
	L1R10 (2004)	EVT-1	Visual examination of those core spray piping welds for which UT technique is not demonstrated. No indications.
	L1R09 (2002)	EVT-1	Visual examination of those core spray piping welds for which UT technique is not demonstrated. No indications.
	L1R08 (1999)	UT	Ultrasonic examination of the welds for which the UT technique is demonstrated. Re-sized flaws on BP4a, DP5, and DP6. Flaw evaluation performed and welds scheduled for examination in L1R10.
	L1R08 (1999)	EVT-1	Visual examination of those core spray piping welds for which UT technique is not demonstrated. No indications. Visual examination of 50% of the core spray sparger welds. No indications.
Core Spray Sparger	L1R11 (2006)	EVT-1	Visual examination of 50% of the core spray sparger welds. No indications.
	L1R10 (2004)	EVT-1	Visual examination of 50% of the core spray sparger welds. No indications.
	L1R09 (2002)	EVT-1	Visual examination of 50% of the core spray sparger welds. No indications.
	L1R08 (1999)	EVT-1	Visual examination of 50% of the core spray sparger welds. No indications.
Attachment Welds	L1R11 (2006)	EVT-1/VT-1/VT-3	(See jet pump and core spray sections for those attachment welds.) Visual examination of 2 guide rod attachment welds, 12 feedwater sparger attachment welds, and both the upper and lower surveillance capsule welds at three locations. No indications.
		EVT-1	Visual examination of the steam dryer support lug at 185° where wear was observed last outage. No change in the wear.
	L1R10 (2004)	EVT-1/VT-1/VT-3	(See jet pump and core spray sections for those attachment welds.) Visual examination of 4-steam dryer support lug welds, 2 feed water sparger attachment welds, and both the upper and lower surveillance capsule welds at three locations. The steam dryer support lug at 185° showed signs of wear and was accepted for one cycle.
	L1R08 (1999)	EVT-1/VT-1	(See jet pump and core spray sections for those attachment welds.) Visual examination of 4 steam dryer support lug welds. No indications.
Core Shroud	L1R11 (2006)	UT	UT of welds H3, H4, H6, and H8 (LaSalle-specific numbering). Coverage on H6 and H8 was less than 50%, and a site-specific flaw evaluation was performed and re-inspection is in 6 years. Note that 100% of the accessible areas were not examined, and a Deviation Disposition was submitted. Indications were less than 10% on each weld.
	L1R07 (1996)	UT	UT of welds H3, H4, H5, H6, and H8 (LaSalle-specific numbering). No indications noted except on H4, where indications were 3.0%. Next inspection in 2006.

REACTOR INTERNALS INSPECTION HISTORY

Plant: LaSalle 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Shroud Support	L1R11 (2006)	EVT-1	Visual examination of 8 shroud support plate gusset welds. No indications.
	L1R11 (2006)	VT-3	Visual exam of 100% of the accessible portion of the top of H9 and both access hole covers. No indications.
	L1R10 (2004)	EVT-1	Visual examination of 11 shroud support plate gusset welds. No indications.
	L1R10 (2004)	EVT-1	Visual examination of approximately 20% of H8a. No indications.
	L1R09 (2002)	UT	Ultrasonic examination of 100% of the H9 weld from the vessel outside diameter. No indications.
	L1R08 (1999)	EVT-1	Visual examination of 6 shroud support plate gusset welds. No indications.
	L1R08 (1999)	EVT-1	Visual examination of approximately 2% of H8a, 23% of the top of H9, and both access hole covers. No indications.
	L1R07 (1996)	VT-1	Visual examination of both access hole covers. No indications.
SLC	L1R11 (2006)	VT-2	Visual examination during the system leak test. No indications.
	L1R10 (2004)	VT-2	Visual examination during the system leak test. No indications.
		PT	Surface examination. No indications.
	L1R09 (2002)	VT-2	Visual examination during the system leak test. No indications.
L1R08 (1999)	VT-2	Visual examination during the system leak test. No indications.	
Jet Pump Assembly	L1R11 (2006)		The hold-down beams on jet pumps 5, 6, 9 and 10 were proactively replaced with low stress beams.
		EVT-1	Visual examination of RB-2 welds on 6 pumps. NRI.
			Installation of riser brace clamps on the risers for jet pumps 5/6 and 9/10 to repair the RS-9 flaws identified in L1R10.
			The slip joint clamps on jet pumps 5, 6, 9 and 10 were upgraded to a new style.
		VT-3	Visual examination of the 16 old style slip joint clamps installed in the previous outage. No indications.
		EVT-1	Visual examination of RB-1 on 12 jet pumps and RB-2 on 6 jet pumps. No indications.
		VT-1	Visual examination of WD-1 on 20 jet pumps. No change in the wear identified in L1R10.
	EVT-1	Visual examination of RS-3 on 5 pumps. No indications.	
	L1R10 (2004)	UT	BB-1, BB-2, and BB-3 areas of all 20 hold-down beams. Indications at BB-1 on Jet Pump 15 resulted in replacement of this beam with a low stress beam. When the inlet mixer for Jet Pump 19 was replaced, the beam was proactively replaced.
		EVT-1	Visual examination of RS-3 on 5 risers. No indications.
		VT-3	Best effort examination of the inaccessible welds AD-1, AD-2, and DF-3 on all 20 jet pumps. No indications.
		EVT-1	Visual examination of DC-3 on 8 pumps. No indications.
		EVT-1	Visual examination of DF-1 on 11 Jet Pumps. No indications.
		EVT-1	Visual examinations of DF-2 on 2 Jet Pumps. No indications.
EVT-1		Visual examination of RS-1 welds on all 10 risers. No indications.	
EVT-1	Visual examination of RS-2 welds on 5 risers. No indications.		
EVT-1	Visual examination of RS-3 on 5 risers. No indications.		

REACTOR INTERNALS INSPECTION HISTORY

Plant: LaSalle 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly continued		EVT-1	Visual examination of RS-6 and RS-7 on 10 jet pumps. No indications.
		EVT-1	Visual examination of RS-8 on all 20 jet pumps. No indications.
		EVT-1	Visual examination of RS-9 on all 20 jet pumps. Indications found on 3 jet pumps (5, 6 and 9). Flaw evaluation performed and required the installation of a repair in L1R11.
		EVT-1	Visual examination of IN-1 on 11 jet pumps. No indications.
		EVT-1	Visual examination of IN-2 on 11 jet pumps. No indications.
		EVT-1	Visual examination of MX-2 on 11 jet pumps. No indications.
		EVT-1	Visual examination of RB-1 on 19 of the jet pumps. No indications.
		EVT-1	Visual examination of RB-2 on 18 jet pumps. No indications.
		VT-1	Visual examination of WD-1 on 20 jet pumps. Wear identified on 10 jet pumps. Wear accepted as-is on 9 jet pumps; inlet mixer for jet pump 19 replaced with a different inlet mixer.
		VT-1	Visual examinations of 10 auxiliary wedges installed in previous outages. No indications.
			Installed auxiliary wedges at the following vessel side locations: jet pumps 4, 12, 13, 14, 15, 16, and 19. Installed auxiliary wedges at the following shroud side locations: jet pumps 1, 3, 4, 12, 14, and 16.
		EVT-1	Visual examination of the strain relief welds on the 10 risers. No indications.
			Slip joint clamps were installed on all 20 jet pump inlet mixers.
		L1R09 (2002)	VT-3
			Installed auxiliary wedges at the following vessel side location: jet pump 6. Installed auxiliary wedges at the following shroud side location: 11.
		VT-1	Visual examination of 2 auxiliary wedges installed in previous outages. No indications.
	L1R08 (1999)	UT	UT of 10 jet pump beams at the BB-1 and BB-2 locations. No indications.
		EVT-1	Visual examination of DF-1 on 10 Jet Pumps. No indications.
		EVT-1	Visual examinations of DF-2 on 10 Jet Pumps. No indications.
		EVT-1	Visual examination of RS-1 welds on 5 risers. No indications.
		EVT-1	Visual examination of RS-2 welds on 5 risers. No indications.
		EVT-1	Visual examination of RS-3 on 5 risers. No indications.
		EVT-1	Visual examination of RS-6 and RS-7 on 10 jet pumps. No indications.
		EVT-1	Visual examination of RS-8 on 10 jet pumps. No indications.
		EVT-1	Visual examination of RS-9 on 10 jet pumps. No indications.
		EVT-1	Visual examination of IN-1 on 10 jet pumps. No indications.
		EVT-1	Visual examination of IN-2 on 10 jet pumps. No indications.
	EVT-1	Visual examination of MX-2 on 10 jet pumps. No indications.	
	EVT-1	Visual examination of RB-1 on 10 of the jet pumps. No indications.	
	EVT-1	Visual examination of RB-2 on 10 of the jet pumps. No indications.	

REACTOR INTERNALS INSPECTION HISTORY

Plant: LaSalle 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
		VT-3	Visual examination of WD-1 on 20 jet pumps. Due to wear observed in L1R07, the inlet mixer on jet pump 9 was replaced and the wedge was oversized, and the restrainer bracket was machined to accommodate the larger wedge. To prevent flow imbalance, the inlet mixer on jet pump 10 was proactively replaced.
			Auxiliary wedges installed at the following vessel side locations: jet pumps 1, 5, 7, 8, and 10. Auxiliary wedges installed at the following shroud side location; jet pumps 6.
		VT-1	Gaps at the vessel side set screw were identified on 1 pump and accepted without installation of an auxiliary wedge for one cycle. Gaps at the shroud side side screw were identified on 1 pump and accepted without installation of an auxiliary wedge for one cycle.
			The temporary auxiliary wedges installed on the vessel and shroud side of jet pump 9 were replaced with permanent auxiliary wedges. The wear on WD-1 was accepted for another cycle.
	L1R07 (1996)	VT-3	Visual examination of WD-1 on 2 jet pumps with wear observed on jet pump 9. Flaw evaluation determined acceptable for one cycle.
		UT	UT of all 20 jet pump holddown beams at BB-1; one indication on #9 beam; beam replaced.
		VT-1	A gap was identified on the vessel side set screw of jet pump 9, and temporary wedges were installed at both set screws on jet pump 9.
LPCI Couplings	L1R10 (2004)	EVT-1/VT-3/VT-1	Visual examination of four locations on all three couplings. No indications.
	L1R08 (1999)	EVT-1/VT-3/VT-1	Visual examination of four locations on all three couplings. No indications.
Lower Plenum	L1R11 (2006)	VT-3	Areas below the core plate made accessible due to the removal of the inlet mixers for jet pumps 5, 6, 9 and 10. Areas include CRD/ST-1, bottom of H9, and ICH/RPV-1. No indications.
	L1R10 (2004)	VT-3	Areas below the core plate made accessible due to the removal of the inlet mixer for jet pump 19. Areas include CRD/ST-1, bottom of H9, and ICH/RPV-1. No indications.
	L1R09 (2002)	VT-3/EVT-1	Visual examination of the fuel support guide tube pins (FS/GT-ARPIN-1) at 20 locations, CRGT-1 at 20 locations, CRGT-2 at 21 locations, and CRGT-3 at 21 locations. No indications.
	L1R08 (1999)	VT-3	Visual examination of the fuel support guide tube pins (FS/GT-ARPIN-1) at 19 locations, the CRGT-1 at 19 locations. No indications.

REACTOR INTERNALS INSPECTION HISTORY

Plant: LaSalle 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer	L1R11 (2006)	EVT-1	Re-inspection of lower guide bracket at 180° and hood A plate 5 where previous indications existed and were stop drilled. No new indications.
		VT-1	All welds on the half of the dryer between 180° and 360°: access hole cover, drain channels, vertical welds and horizontal welds. No new indications. Indications at V13-270 and V14-170 were re-examined and there was no growth.
	L1R10 (2004)	VT-3	Visual exams on the end panels and welds; one indication on bank B, bank 2 which was stop drilled, and one previous indication on bank D bank 4 and there was no growth. All four lifting lugs and their brackets (previous indications at five locations with no growth), 100% of tie rods (10 previous indications unchanged), 100% of tie bars
		VT-1	Visual examination of upper and lower guide brackets with an indication on the lower guide at 180° which was stop drilled, all horizontal welds, all horizontal plates (hood A plate 5 indication was stop drilled), hood F plate 1 (previous indication did not grow), 100% of the tie bars
Top Guide	L1R10 (2004)	VT-3	Visual examination of two c-clamps; no indications.
	L1R08 (1999)	VT-3	Visual examination of four c-clamps; no indications.
Vessel	L1R10 (2004)	VT-3	Inspection of the general condition of the RPV interior surface from the RPV closure flange elevation to the Steam Dam, 360° around the RPV interior. NRI.
			Inspection of the general condition of the cladding at the Steam Dam elevation, 360° around the RPV interior. NRI.
			Inspection of the general condition of the RPV interior surface from below the core plate to the shroud support plate. NRI.
	L1R09 (2002)	VT-3	Inspection of the general condition of the RPV interior surface from the RPV closure flange elevation to the Steam Dam, 360° around the RPV interior. NRI.
			Inspection of the general condition of the cladding at the Steam Dam elevation, 360° around the RPV interior. NRI.

REACTOR INTERNALS INSPECTION HISTORY

Plant: **LaSalle 2**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping	L2R11 (2007)	EVT-1	Visual examinations of core spray piping welds for which the UT is not demonstrated. No indications (NRI).
		EVT-1	8 piping brackets; NRI.
	L2R10 (2005)	UT	UT of 34 welds; AP1, AP2, AP3, AP4a, AP4b, AP5, AP6, AP7, AP4c, AP8b, BP3, BP4a, BP4b, BP5, BP6, BP7, BP4c, BP8b, CP1, CP2, CP3, CP4a, CP4b, CP5, CP6, CP7, CP4c, DP3, DP4a, DP4b, DP5, DP6, DP7 and DP4c. Existing flaw on BP5 re-sized with no growth. All others NRI.
		EVT-1	Welds for which UT is not demonstrated: AP1, AP4d, AP8a, BP5, BP4d, BP8a, CP1, CP4d, CP8a, CP8b, DP4d, DP8a, and DP8b. NRI. 2 core spray piping brackets; NRI.
	L2R09 (2003)	EVT-1	Visual examinations of those core spray piping welds for which the UT technique is not demonstrated. No indications.
	L2R08 (2000)	UT	UT for those welds for which the UT tool is qualified.
		EVT-1	8 piping brackets; NRI.
Core Spray Sparger	L2R11 (2007)	VT-1	S3D-a, S3D-b and S3D-c from 352 to 88° and S3C-a, S3C-b and S3C-c from 7.5 to 88°; one bent sparger nozzle deflector; all others NRI. Bent nozzle accepted for one cycle.
		EVT-1	S1A, S2A (Left and right), S4A, S1B, S2B (Left and right), S4B, S1C, S2C (Left and right), S4C, S1D, S2D (Left and right), S4D. NRI.
		VT-1	6 sparger brackets; NRI.
	L2R10 (2005)	VT-1	S3A-a and S3A-d from 268 to 008° and S3D-a and S3D-b from 352 to 268; NRI 6 sparger brackets; NRI.
		L2R09 (2003)	EVT-1
	L2R08 (2000)	VT-1	100% of all sparger welds. NRI.
		EVT-1	12 sparger brackets. NRI.
Attachment Welds	L2R11 (2007)		(See jet pump and core spray sections of this report.)
	L2R10 (2005)	EVT-1	Steam dryer attachment welds, four locations, NRI
		VT-3	Upper bracket attachment welds for surveillance baskets at three locations, NRI.
		VT-1	Lower bracket attachment welds for surveillance baskets at three locations. Basket disengaged at 120° location and accepted for one cycle. All others NRI.
		EVT-1	All feedwater sparger attachment welds; NRI.
	L2R09 (2003)	EVT-1	All feedwater sparger attachment welds; NRI.
	L2R08 (2000)	VT-1	Steam dryer attachment welds, four locations, NRI
VT-3		Guide Rod attachments at 0° and 180; NRI. Upper surveillance capsule brackets at three locations: NRI.	
VT-1		Lower surveillance capsule brackets at three locations; NRI.	
Core Shroud	L2R11 (2007)	VT-3	Surfaces of the shroud for ASME Section XI. NRI.
	L2R10 (2005)	UT	UT of welds H3, H5, H6, and H8 All welds are NRI.
		L2R07 (1996)	UT
	L2R06 (1995)	UT	UT of H3, H4, H5, H6, and H8. NRI.

(Note: LaSalle has two beltline horizontal welds and thereby unique designation).

REACTOR INTERNALS INSPECTION HISTORY

Plant: LaSalle 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections	
Shroud Support	L2R11 (2007)	VT-3	Access Hole Covers at 0 and 180° for ASME Section XI. NRI	
			Accessible portions of the top of the shroud support plate for ASME Section XI. NRI.	
			Top of H9 weld (accessible locations) for ASME Section XI. NRI	
	L2R10 (2005)	VT-1	VT-3	Access Hole Covers at 0 and 180°--NRI
				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.
		EVT-1	VT-3	Inspection of the general condition of the cladding at the steam dam elevation, 360° around the RPV interior. NRI.
				Examined RPV cladding from below core plate to shroud support plate due to removal of the inlet mixers. NRI.
	L2R09 (2003)	UT	VT-3	H8a weld (BWRVIP weld H8) for >10%--NRI
		VT-3	VT-3	UT of 100% of H9 from the RPV OD. NRI.
			VT-3	VT-3
Top Guide	L2R11 (2007)	VT-3	C-clamp at 0°. NRI	
	L2R10 (2005)	VT-3	Accessible portions of the top guide for ASME Section XI. NRI	
SLC	L2R11 (2007)	VT-2	C-clamps at 4 locations--NRI	
		VT-2	Visual inspection of the partial penetration weld to the bottom head during the Section XI system leak test. NRI.	
	L2R10 (2005)	VT-2	UT of the partial penetration weld and heat affected zone. NRI.	
		VT-2	Visual inspection of the partial penetration weld to the bottom head during the Section XI system leak test. NRI.	
	L2R09 (2003)	VT-2	Visual inspection of the partial penetration weld to the bottom head during the Section XI system leak test. NRI.	
		PT	Surface examination. NRI.	
Jet Pump Assembly	L2R11 (2007)	VT-2	Visual inspection of the partial penetration weld to the bottom head during the Section XI system leak test. NRI.	
		VT-2	Visual inspection of the partial penetration weld to the bottom head during the Section XI system leak test. NRI.	
	L2R10 (2005)	VT-1	WD-1 wedges on all 20 pumps; 7 wedges/rods showed minor wear; accepted-as-is. Auxiliary wedges installed at four locations on 3 pumps to compensate for observed gaps.	
		VT-1	Examination of ratchet teeth engagement on 13 jet pump hold down beams due to fitup issues in the previous outage. NRI	
	L2R09 (2003)	VT-1	All 20 inlet mixers were replaced with new inlet mixers with labyrinth seals in the slip joint area, and with new non-stellite main wedges. New hold down beams were installed on 17 pumps. After replacement, three point contact verified at all locations (AS-1 shroud side, AS-1 vessel side, and WD-1). NRI.	
		VT-1	Replacement of 3 beams. After a review of material certification paperwork that identified them as Group 1 beams, three holddown beams were replaced with low stress beams.	
		VT-1	WD-1 on 3 pumps; NRI.	
		VT-1	Installed 3 aux. Wedges to ensure three point contact for three pumps.	

REACTOR INTERNALS INSPECTION HISTORY

Plant: LaSalle 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	L2R08 (2000)	UT	UT exam of 10 beams at the BB-1 and BB-2 locations. NRI.
		VT-3	Exam of WD-1 on all 20 pumps; NRI. Exam of all set screw to belly band contact points; installed 7 auxiliary wedges to maintain three point contact; all others NRI.
Jet Pump Diffuser	L2R11 (2007)	EVT-1	AD-2 on 6 pumps; NRI.
			DF-1 on 10 pumps; NRI.
	L2R10 (2005)	EVT-1	AD-2 on 4 pumps; NRI.
			DC-3 on 10 pumps; NRI.
			DF-2 on 10 pumps; NRI.
			DF-3 on 10 pumps; NRI.
	L2R09 (2003)	EVT-1	AD-2 on 4 pumps; NRI.
			DF-1 on 4 pumps; NRI.
			DF-2 on 4 pumps; NRI.
			DF-3 on 4 pumps; NRI.
IN-1 on 10 pumps; NRI.			
L2R08 (2000)	EVT-1	AD-2 on 6 pumps; NRI.	
		DF-1 on 6 pumps; NRI.	
		DF-2 on 6 pumps; NRI.	
	UT	DF-3 on 6 pumps; NRI.	
Jet Pump Riser	L2R11 (2007)		Re-sized flaw on RS-1c on 19/20; no change in length.
		EVT-1	RS-1 on 2 risers; NRI. RB-1 on 12 jet pumps; NRI.
	L2R10 (2005)	EVT-1	Examined strain relief welds on all 10 risers. NRI
			Re-sized flaw on RS-1c on 19/20; no change in length.
			RS-2 on 3 risers; NRI.
			RS-3 on 5 risers; NRI.
			RS-6/7 on 10 jet pumps; NRI.
			RS-8/9 on all 20 jet pumps; NRI.
	L2R09 (2003)	EVT-1	Re-examined flaws on two RS-1 welds; that on the 1/2 riser was determined to be non-relevant; those on the 19/20 riser were re-sized, with no change since L2R07 (1996).
			MX-2 on 4 pumps; NRI.
			RS-6/7 on ten pumps; NRI.
	L2R08 (2000)	UT	UT exam of MX-2 on 6 pumps; NRI.
	L2R07 (1996)	VT-1	RS-1 on all ten risers; two indications; one on the 1/2 riser and the second on the 19/20 riser; both accepted for two cycles.
RS-2 on all ten risers. NRI.			
			RS-3 on all ten risers. NRI.
Steam Dryer	L2R11 (2007)	EVT-1	All welds recommended by BWRVIP-139 and SIL 644 Revision 2 for a curved hood dryer on the 90° side of the dryer, tie rods on both sides, upper support ring external surfaces, upper and lower guide at 180°, (indication on the lower guide bracket accepted for one cycle), lifting lugs and lifting assembly brackets at 45 and 135°, and 18 tie bars. Previous indications on tie bars reviewed and no change in sizes. All other welds NRI.
	L2R10 (2005)	VT-1	All welds recommended by SIL 644 Revision 1 for a curved hood dryer on the 270° side of the dryer, horizontal bank welds on both the 90° and 270° sides, all four lifting lugs; lifting

REACTOR INTERNALS INSPECTION HISTORY

Plant: LaSalle 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			assembly brackets at 225° and 315° locations, and all tie bars. Indications found on three tie bars and accepted for one cycle. Upper strap on lifting assembly at 215° found broken and was removed. All other welds NRI.
Vessel	L2R10 (2005)	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.
	L2R09 (2003)	VT-3	Inspection of the general condition of the cladding at the Steam Dam elevation, 360° around the RPV interior. NRI.
Lower Plenum	L2R10 (2005)	VT-1	Examined all areas below the core plate made accessible by disassembly of 20 jet pumps. Areas examined included CRD/ST-1, ST/RPV-1, H8a, H9, H10, H11, H12, ICH/RPV-1, and bottom head cladding. NRI for all twenty locations.
	L2R09 (2003)	VT-3 / EVT-1	Visual examination of the fuel support guide tube pins (FS/GT-ARPIN-1) at 4 locations, CRGT-1 at 4 locations, CRGT-2 at 21 locations, and CRGT-3 at 21 locations. No indications.
	L2R08 (2000)	VT-3	Visual examination of the fuel support guide tube pins (FS/GT-ARPIN-1) at 14 locations, CRGT-1 at 15 locations. No indications.
Other	L2R11 (2007)	VT-3	Removal of the surveillance capsule basket from 120° due to a broken spring.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 1 - Spring 2006 Update

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	1994	VT-3	VT-3 examination of OD of welds H-1, H-2, H-3, H-4, H-5, H-6, and H-7. No indications identified.
	1996	UT	Baseline Category "B" UT examinations of welds H-3, H-4, H-5 and H-7 per BWRVIP-01, Rev. 1. Minor indications identified on H-3. No indications identified on H-4, H-5 and H-7.
	2006	UT	Category "B" welds were re-examined by UT. Due to the identification of cracking, the scope was expanded and the shroud reclassified as a Category "C". All horizontal welds except H1 were UT examined from two sides using Phased-Array on most ring (H2 LKUP, H3 LKDN and H6 LKDN) locations. Recently demonstrated H1 emersion technique looking down was not successful. Vertical welds V-15, 16, 17 and 18 in the beltline screened-in and were UT examined from ID. Vertical welds V-7 and 8 at the top guide and V-25 and 26 below the core plate also screened-in and were visually examined from the shroud OD.
Shroud Support	1987, 1990, & 1994	VT-3	VT-3 examination of H-8 and H-9 welds from annulus. No indications identified. VT-3 examination of both access hole covers and welds. No indications identified.
	1998	VT-3	50% of shroud legs @ 10°, 30°, 60° Azimuths and 50% of annulus floor. No indications identified. VT-3 examination of both access hole covers and welds. No indications identified.
	2000	EVT-1	Visual examination of H-8 and H-9 welds from annulus at 0 and 180 Degree azimuths. No indications identified.
	2004	EVT-1, VT-1 & UT	Visually examined H-8 from annulus at 0° and 180° and UT examined 10% of H9. One indication was identified on H9 that was acceptable to the requirements of IWB-3000. EVT-1 and VT-1 examination of both access hole covers and welds. No indications identified.
Core Spray Piping	1987 to 1996	VT-1	Enhanced VT-1 (1 mil resolution) examination performed every refueling outage on piping and welds per IEB 80-13. No indications identified.
	1998	UT & CSVT-1	UT baseline and visual of piping. No indications identified.
	2002	UT & EVT-1	UT all creviced welds plus 25% sample of P4(c) welds. One indication was identified on P3bA (~ 3.1 inches). No other indications were identified. EVT-1 of un-demonstrated welds P4dB, P4dC, P4dD, P8aA, P8aB, P8aC, and P8aD. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 1 - Spring 2006 Update

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
	2004	EVT-1	EVT-1 of previous P3bA indication. No change in identified length. EVT-1 of un-demonstrated welds P4dA, P8aA, P8aB, P8aC, and P8aD. No indications identified.
	2006	UT & EVT-1	UT of previous P3bA indication (~ 2.8 inches – no change) and most other creviced welds. UT equipment issues on 10 of 24 welds and alternatively EVT-1 examined. No new indications identified. EVT-1 of un-demonstrated P4dB, P8aA, P8aB, P8aC, and P8aD. Two indications were identified on P8aC as weld discontinuities that were likely opened up from construction. No other indications were identified.
Core Spray Piping Brackets	1987 to 1996	VT-1	VT-1 examination performed every refueling outage on piping and welds per IEB 80-13. No indications identified.
	1998	CSV T-1	Examined all eight brackets (PB1 through PB8). No indications identified.
	2000	EVT-1	Examined brackets PB1 and PB2. No indications identified.
	2002	EVT-1	Examined brackets PB3 and PB4. No indications identified.
	2004	EVT-1	Examined brackets PB5 and PB6. No indications identified.
	2006	EVT-1	Examined brackets PB7 and PB8. PB7 was identified with indications on the two upper bolts. In each case, one of two tack welds was found to be cracked. No other indications identified.
Core Spray Sparger	1987 to 1996	VT-1	Enhanced VT-1 (1 mil resolution) examination performed every refueling outage on piping and welds per IEB 80-13. No indications identified.
	1998	EVT-1 & CSV T-1	EVT-1/CSV T-1 all spargers. No indications identified.
	2000	EVT-1 & VT-1	Examined "A and B" sparger welds S1, S2a,b, S3a,b and S4a,b. No indications identified.
	2002	EVT-1 & VT-1	VT-1 of S3 on B sparger and EVT-1 of S1, 2 and 4 on C and D spargers. No indications identified.
	2004	EVT-1 & VT-1	VT-1 of S3 on C sparger and EVT-1 of S1, 2 and 4 on A and B spargers. No indications identified.
	2006	EVT-1	VT-1 of S3 on D sparger and EVT-1 of S1, 2 and 4 on C and D spargers. No indications identified.
Core Spray Sparger Brackets	1987 to 1996	VT-1	VT-1 examination performed every refueling outage on piping and welds per IEB 80-13. No indications identified.
	1998	CSV T-1	Examined all brackets (SB1 through SB12). No indications identified.
	2000	VT-1	Examined brackets SB1, SB2, SB3, SB10, SB11 and SB12. No indications identified.
	2002	VT-1	Examined brackets SB4, SB5, SB6, SB7, SB8, and SB9. No indications identified.
	2004	VT-1	Examined brackets SB1, SB2, SB3, SB10, SB11, and SB12. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 1 - Spring 2006 Update

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
	2006	VT-1	Examined brackets SB4, SB5, SB6, SB7, SB8, and SB9. SB8 was found slightly deformed, no other indications identified.
Top Guide (Rim, etc.)	1987	VT-3	VT-3 examination of accessible welds and surfaces. No indications identified.
	1990	VT-3	VT-3 examination of accessible welds and surfaces. Also, VT-3 examination of 32 wedges, bolts, and keepers. No indications identified.
	1994	VT-1 & VT-3	VT-1 examination of accessible welds and surfaces at core locations 14-31, 22-23, 22-39, 30-15, 30-47, 38-23, 38-39, and 46-31. Also, VT-3 examination of 32 wedges, bolts, and keepers. No indications identified.
	1998	VT-1 & VT-3	VT-1 of grids 30-31 and 34-35. Also, VT-3 surfaces and welds (0°-180°) including wedges, bolts and keepers. No indications identified.
	2000	VT-3	C-Clamps at 0°, 90°, 180° and 270°. No indications identified.
	2004	VT-3	C-Clamps at 0°, 90°, 180° and 270°. No indications identified.
Core Plate (Rim, etc.)	1998	VT-3	VT-3 welds and surfaces, including 17 hold down bolts/nuts and 7 fuel support castings. No indications identified.
SLC			N/A, SLC connects to Core Spray System.
Jet Pump Assembly	1987, 1990, & 1994	VT-3	VT-3 examination of all jet pump components No indications identified.
	1998	MVT-1	Examined welds RB-1a, b, c, d, RB-2a, b, c, d, RS-1, RS-2, RS-3 RS-6/7, RS-8/9, IN-4, MX-2, WD-1, DF-1, DF-2, AD-1 and AD-2 for JP1/2, JP3/4, JP5/6, JP7/8 and JP9/10. Also, JP19/20 RS-3 weld was examined. No indications identified.
	2000	EVT-1 & VT-1	EVT-1 examined RB-1a, b, c, d and RB-2c on JP11/12; RB-1a, b, d and RB-2a, b, c, and d on JP15/16; RS-1, RS-2, RS-3 RS-6/7, RS-8/9 for JP11/12 and JP15/16; RS-1, RS-2, RS-3 RS-6/7 for JP13/14; and IN-4, MX-2, DF-1, DF-2, AD-1 and AD-2 for JP11, JP12, JP13, JP14 and JP15. No indications identified. VT-1 examined WD-1 for JP11, JP12, JP13, JP14 and JP15. No indications identified.
	2002	EVT-1 & VT-1	EVT-1 examined welds RB-1a, b, c, d and RB-2a, b, c, d on JP13/14; RB-2a, b, and d on JP11/12; IN-4, MX-2, DF-1, DF-2, AD-1 and AD-2 for JP16; RB-1c for JP15/16; and RS-3 for JP17/18 riser. No indications identified. VT-1 examined WD-1 for JP1, JP2, JP13, and JP14. No indications identified. EVT-1 examined RS-8/9 on all ten risers due to scope expansion from an indication identified on JP13/14 RS-9 weld (~0.38 inches). No other indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 1 - Spring 2006 Update

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
	2004	EVT-1, & VT-1	<p>EVT-1 examined RS-3 and RS-6/7 for JP#1/2, JP#3/4, JP#7/8, and JP#9/10; RS-3 for JP#19/20; RB-1a, b, c, d, RB-2a, b, c, d, RS-1, RS-2, RS-6/7, RS-8/9, IN-4, MX-2, DF-1, DF-2, AD-1 and AD-2 for JP17/18. No indications were identified.</p> <p>Re-examined previous indication JP13/14 RS-9 by EVT-1. No change in flaw length.</p> <p>VT-1 examined WD-1 on JP16, JP17, and JP18. Initially, suspected wedge movement on JP18 prompted an investigation into the condition of the setscrews. Both tack welds on the shroud side set screw were cracked on JP18. The setscrew was staked and an auxiliary wedge installed. No other indications were identified.</p>
	2006	EVT-1, VT-1, & VT-3	<p>EVT-1 examined RS-1 and RS-2 on JP3/4, JP5/6, JP7/8, JP9/10, and JP19/20; RS-3 on JP11/12, JP13/14 and JP15/16; RB-1 a, b, c and d on JP7/8, JP9/10, JP11/12; RB-2a, b, c and d on JP1/2, JP7/8 and JP9/10; RS-6/7 on JP5/6, JP13/14, and JP15/16; IN-4 on JP9, JP11, and JP16; MX-2 on JP9; DF-2 on JP6, JP7, JP9, and JP10; AD-1 on JP6, JP7, and JP9; AD-2 on JP6 and JP7. No indications identified.</p> <p>EVT-1 examined previous indication at JP13/14 RS-9. No change in flaw length.</p> <p>VT-1 examined all twenty WD-1, AS-1 and AS-2 locations in response to wear identified on Li2R08 during 2005. Gaps were identified on vessel side setscrews of JP4, JP7, JP9, JP13, JP15, JP19, and JP20. Cracked tack welds were identified on shroud side setscrews of JP8, JP12, JP14, JP17, JP18, and JP19. Slip Joint Clamps were proactively installed on all twenty Jet Pumps. Five auxiliary wedges installed: two at JP13 (pre-emptive due to RS-9 flaw), two at JP14 (pre-emptive due to RS-9 flaw), and one at JP15 (vessel side only due to 23 mil gap). No other indications identified.</p> <p>VT-1 examined auxiliary wedge previously installed at JP18 shroud side setscrew. No indications identified.</p>
Jet Pump Beams	1994	UT	UT baseline of replacement hold-down beams. No indications identified.
	2004	UT	UT examined BB-1, 2, and 3 for all jet pump beams. One indication identified in BB-2 region of JP#4. This beam was changed out during the same refuel outage with a Group 3 style beam. No other indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 1 - Spring 2006 Update

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
	2006	VT-3	VT-3 examined BB-1, BB-2, and BB-3 on replacement beam for JP4. No indications identified.
Jet Pump Diffuser			See Jet Pump Assembly
CRD Guide Tube	1990	VT-3	VT-3 examination of replacement CRDs at core locations 10-23, 14-19, 14-23, 14-31, 18-43, 18-55, 22-11, 22-39, 22-47, 26-03, 26-11, 26-27, 30-23, 30-3530-55, 34-23, 34-37, 34-31, 34-39, 38-07, 38-23, 38-31, 38-35, 38-39, 42-19, 46-11, 46-39, and 54-31. No indications identified.
	1992	VT-3	VT-3 examination of control rod assembly at core locations 30-11,22-55, 54-23, 38-07, 38-55, and 22-07. No indications identified.
	1994	VT-3	VT-3 examination of replacement CRDs at core locations 02-43, 10-19, 10-39, 14-39, 18-23, 18-39, 20-35, 26-27, 26-31, 30-47, 34-31, 34-47, 38-19, 38-35, 38-41, 42-15, 42-55, 50-43, 54-19, and 58-31. No indications identified.
	1998	VT-3	VT-3 of CRDs at core loc. 54-49, 48-55,50-51, 42-59, 30-31, 30-34, 34-35, 26-31, 34-31, 26-27, 30-27, and 34-27. No indications identified.
	2000	EVT-1 & VT-3	Examined CRGT-1,2,3 and FS/GT-ARPIN-1 at core locations 30-55, 38-31 and 38-39. No indications identified.
	2004	EVT-1 & VT-3	Examined CRGT-1,2,3 and FS/GT-ARPIN-1 at 10-39, 18-27, 18-35, 26-43, 30-15, 30-47, 34-15, 34-19, 34-43, and 46-11. No indications identified.
	CRD Stub Tube	1992	VT-2
1996		VT-2	VT-2 examination from vessel exterior on 100% of penetrations. No indications identified.
1998		VT-3	VT-3 of tube to housing and tube to RPV weld at core loc. 54-49, 48-55,50-51, 42-59, 30-31, 30-34, 34-35, 26-31, 34-31, 26-27, 30-27, and 34-27. No indications identified.
2000		VT-2	VT-2 examination from vessel exterior on 100% of penetrations. No indications identified.
2006		VT-2	VT-2 examination from vessel exterior on 100% of penetrations. No indications identified.
In-Core Housing	1992	VT-2	VT-2 examination from vessel exterior on 100% of penetrations once per interval, in excess of Section XI. No indications identified.
	1996	VT-2	VT-2 examination from vessel exterior on 100% of penetrations. No indications identified.
	1998	VT-3	VT-3 of housing and weld to RPV at core loc. 48-53, 32-29, 24-29, 24-33, and 32-33. No indications identified.
	2006	VT-2	VT-2 examination from vessel exterior on 100% of penetrations. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 1 - Spring 2006 Update

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
Dry Tube	1989	VT-3	VT-3 examination of accessible portions of dry tubes at core locations 16-45, 40-45, 40-21, 16-21, (SRM's), 16-53, 48-53, 24-37, 32-37, 32-29, 24-29, 48-13, and 16-13 (IRM's). No indications identified.
	1992	VT-1	VT-1 examination of 4 dry tubes. No indications identified.
	1994	VT-1	VT-1 examination of dry tubes at core locations: 24-37 (IRM), and 40-21 and 38-23 (SRM). No indications identified.
	2004	VT-1	Examined SRMs at 16-45 and 40-21 and IRMs at 24-29, 24-37, 32-37 and 48-13. Dry tube 24-29 identified as not fully engaged with the top guide. No other indications identified.
	2006	N/A	Replaced dry tubes SRMs 16-21 and 40-45 and IRMs 24-29, 24-37, 48-13, and 48-53. Plan to replace second half in 2008.
Instrument Penetrations	1990	VT-3	VT-3 examination of interior attachment of instrument nozzles N16A through D, N12A through D, and N11 A & B. No indications identified. PT examination performed on all instrument nozzle to safe end welds once per interval, per Section XI (includes N10 Core Differential Pressure penetration). No indications identified.
	1996	VT-2	VT-2 examination from vessel exterior on 100% of penetrations once per interval, in excess of Section XI. No indications identified.
	2006	VT-2	VT-2 examination from vessel exterior once per interval. No indications identified.
Vessel ID Brackets	1987 to 1996	VT-1 & VT-3	VT-1 or VT-3 performed on all ID bracket welds once per interval per Section XI. No indications identified.
	1998	VT-1 & VT-3	Examinations include brackets on the steam dryer-4, jet pump riser-10, core spray-8, surveillance sample-2, and guide rod-1. No indications identified.
	2000	VT-1 & VT-3	VT-1 examination of two Core Spray Piping Brackets at 15 degrees and 85.5 degrees. VT-3 examination of one Guide Rod Bracket at 180 degrees. No indications identified.
	2002	EVT-1, VT-1 & VT-3	Jet Pump support pads on JP15/16 and JP17/18, Feedwater Sparger End Brackets at 5°, 55°, 65° and 115°, and Steam Dryer support lugs at 4° and 94°, and Core Spray Brackets at 112.5° and 165°. No indications identified.
	2004	EVT-1, VT-1 & VT-3	Jet Pump support pads on JP 1/2, 3/4, 7/8 and 19/20, Feedwater Sparger End Brackets at 125°, 175°, 185° and 235°, and the Steam Dryer support lug at 184° and Core Spray Brackets at 195° and 247.5°. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Limerick Generating Station, Unit 1 - Spring 2006 Update**

Components in BWRVIP Scope	Date of Inspection	Inspection Method Used	Inspection Results, Repairs, Replacements, Reinspections
	2006	EVT-1, VT-1 & VT-3	Jet Pump support pads on JP 5/6, 9/10, 11/12 and 13/14, Feedwater Sparger End Brackets at 245°, 295°, 305° and 355°, Guide Rod lugs at 0° and 180° and the Steam Dryer support lug at 274° and Core Spray Brackets at 274.5° and 345°. No indications identified.
LPCI Coupling	1987, 1990, & 1994	VT-3	VT-3 examination of all 4 couplings. No indications identified.
	1998	MVT-1	All of N-17A and B. No indications identified.
	2000	EVT-1, VT-1, & VT-3	All of N-17C and D. No indications identified.
	2002	EVT-1 & VT-3	N17A, locations 45-3b, 6a, 6b, 6c and 6d. No indications identified.
	2004	EVT-1, VT-1, & VT-3	N17A, locations 45-8a, 8b, 8c, 8d and 12 and all of N17B. No indications identified.
Steam Dryer	1998	VT-1 & VT-3	VT-1 examined the steam dryer drain channel welds. No indications identified. VT-3 examined the overall condition of the steam dryer. No indications identified.
	2000	VT-1	VT-1 examined the steam dryer drain channel welds. No indications identified.
	2002	VT-1 & VT-3	VT-1 examined the steam dryer drain channel welds. Stain identified on drain channel SDDC4c. No other indications identified. VT-3 examined the overall condition of the steam dryer. No indications identified.
	2004	VT-1 & VT-3	VT-1 examined cover plate welds, outer bank hood seam welds, drain channel welds, and previous support ring indications. One support ring bolt was found with old mechanical deformation/damage and left as-is. Minor IGSCC previously identified on the support ring. No other indications identified. VT-3 examined steam dryer tie bars. During examination of tie bars, one cam nut was found to be protruding from end bank number 6. This cam nut was staked during the same outage.
	2006	VT-1	Performed BWRVIP-139 inspections of cover plates SDCP 1a-b and 7a-b, top and bottom hood SDBH 1a-b, 2a-b, 3a-b, 4a-b, 5a-b, and 6a-b, end bank welds SDEB 1a-d and 2a-d, lifting lugs, support ring and cam nut tack welds. Minor IGSCC identified on the support ring and tack weld cracking on cam nuts. No other indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Limerick Generating Station, Unit 2 - Spring 2007 Update**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	1999 (2R05)	UT	<p>A UT baseline of H-3, H-4, H-5 and H-7 was performed. H-4 was the only shroud weld examined from two-sides. Indications identified on I.D. of H-3, H-5, and on O.D. of H-3, H-4, and H-5. No indications identified at H-7. Scope expanded to include UT of all remaining circumferential welds (H-1, H-2, and H-6). Indications identified on I.D. of H-1, H-2, and H-6 and on O.D. of H-1. Shroud was reclassified as a Category C, un-repaired shroud.</p> <p>Full structural margin was calculated using one cycle of crack growth. Structural analysis was re-performed in 2R06 and again in 2R07. Re-examination was scheduled for H-1, H-2, H-3, H-4, and H-6 in 2R08 per site-specific evaluations. H-5 and H-7 are scheduled for re-examination in 2R10.</p>
	2005 (2R08)	UT	<p>UT was performed on H-1 and H-6 from one-side with approximately 60% coverage. A two-sided UT with was performed on H-2, H-3, and H-4 with approximately 60-63% coverage. Approx 21.5% of the ring-side scans were obtained for H-2 and H-3 with a new phased array technique.</p>
		EVT-1	<p>Due to equipment problems, vertical welds could not be screened by UT per BWRVIP-76. As a result, all vertical welds were assumed to "screen in", and an EVT-1 was performed on these welds from the shroud OD. Reinspection of the vertical welds, either UT or two-sided EVT-1, is scheduled for 2007(2R09).</p>
	2007 (2R09)	EVT-1	<p>Fuel was removed from areas surrounding the shroud vertical welds, and an EVT-1 examination was performed from the ID and the OD surfaces of the shroud on four vertical welds V15, V16, V17, and V18. No indications were identified.</p> <p>Another analysis of the indications found in 2R08 (2005) on horizontal welds H1, H2, H3, H4, and H6 was performed to demonstrate that structural margins are maintained until 2009 (2R10). The analysis demonstrated acceptable safety factors are maintained and a reinspection by UT is scheduled for 2R10.</p>
Shroud Support / Access Hole Covers	1991 (2R01)	VT-3	<p>VT-3 examination of accessible portions of H-8 and H-9 welds from annulus. VT-3 examination of both access hole covers and welds. No indications identified.</p>
	1993 (2R02)	VT-3	<p>VT-3 examination of shroud support leg welds at Azimuth 300 deg through disassembled jet pump #18. No indications identified.</p>
	1995 (2R03)	VT-3	<p>VT-3 examination of both access hole covers and welds. No indications identified.</p>
	1999 (2R05)	EVT-1	<p>EVT-1 examination 10% of the weld H-8 & H-9 length; in areas of 0 & 180 deg access hole covers. No indications identified.</p>
		VT-3	<p>VT-3 examination of both access hole covers and welds. No indications identified.</p>
	2003 (2R07)	UT	<p>UT of 10% of weld H-9 length. No indications identified.</p>
		VT-3	<p>VT-3 examination of both access hole covers and welds. No indications identified.</p>
	2005 (2R08)	EVT-1	<p>EVT-1 examination of 10% of weld H-8 length. No indications identified.</p>

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Limerick Generating Station, Unit 2 - Spring 2007 Update**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	2007 (2R09)	VT-1	VT-1 examination of both access hole covers and welds. All three welds were examined on the 180 deg Top Hat. No indications identified.
		Best effort VT-1 / VT-3	Best effort VT-1 / VT-3 of the lower side of H-8 and H-9, and six shroud support legs (3 welds H10, H11, H12 on each leg) were examined via access through the disassembly of Jet Pumps 1, 12, and 17. No indications were identified.
Core Spray Piping	1991 (2R01) – 1995 (2R03)	VT-1	Enhanced VT-1 (1 mil resolution) examination performed every refueling outage on piping and welds per IEB 80-13. No indications identified.
	1997 (2R04)	EVT-1	EVT-1 (1/2 mil resolution) examination of welds per IEB 80-13 and BWRVIP-18 baseline. No indications identified.
	1999 (2R05)	UT	UT examination of welds (P1 thru P8) per BWRVIP-18 baseline UT. No indications identified.
		EVT-1	EVT-1 supplemental examination on P4dA, P4dB, P4dC, P4dD, P8aA, P8aB, P8aC, and P8aD. No indications identified.
	2001 (2R06)	EVT-1	EVT-1 of P4dA, P8aA, P8aB, P8aC, and P8aD. No indications identified.
	2003 (2R07)	UT	UT examination of welds (P1 thru P8) with the exception of P4a, P4b, P4d and P8a welds. No indications identified.
		EVT-1	EVT-1 of P4dB, P8aA, P8aB, P8aC, and P8aD. No indications identified.
	2005 (2R08)	EVT-1	EVT-1 of P4dA, P4dC, P8aA, P8aB, P8aC, and P8aD. No indications identified.
	2007 (2R09)	UT	UT examination of P1, P2, P3a, P3b, P4b, P5, P6, P7, and P8b welds was performed. No indications were identified.
		EVT-1	EVT-1 of the far side of P1, P2, P3a, P3b, P4b, and P8b welds, as well as an EVT-1 examination of P4dD and P8a welds was performed. A small piece of raised metal was identified and evaluated as acceptable on the P8aC weld. Also, a small indentation on the collar near the P8aD weld was identified and evaluated as acceptable.
Core Spray Piping Brackets	1999 (2R05)	EVT-1	EVT-1 of 2 piping support brackets PB-7 & PB-8. No indications identified.
	2001 (2R06)	EVT-1	EVT-1 of 2 piping support brackets PB-7 and PB-8. No indications identified.
	2003 (2R07)	EVT-1	EVT-1 of 3 piping support brackets PB-4, PB-5, and PB-6. No indications identified.
	2005 (2R08)	EVT-1	EVT-1 of 3 piping support brackets PB-1, PB-2, and PB-3. No indications identified.
	2007 (2R09)	EVT-1	EVT-1 of 2 piping support brackets PB-7 and PB-8. No indications identified.
Core Spray Sparger	1991 (2R01) – 1995 (2R03)	VT-1	Enhanced VT-1 (1 mil resolution) examination performed every refueling outage on piping and welds per IEB 80-13. No indications identified.
	1997 (2R04)	EVT-1	EVT-1 (1/2 mil resolution) examination of welds per IEB 80-13 and BWRVIP-18 baseline. No indications identified.
	1999 (2R05)	EVT-1	EVT-1 examination of welds S1A, S1B, S2aA, S2bA, S2aB, S2bB S4aA, S4bA, S4aB, and S4bB per BWRVIP-18. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Limerick Generating Station, Unit 2 - Spring 2007 Update**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Sparger (continued)		VT-1	VT-1 examination of welds S3aXXA, S3bXXA, and S3dXXA on nozzles 1A thru 65A. No indications identified.
	2001 (2R06)	EVT-1	EVT-1 examination of welds S1C, S1D, S2aC, S2bC, S2aD, S2bD, S4aC, S4bC, S4aD, and S4bD per BWRVIP-18. No indications identified.
		VT-1	VT-1 examination of welds S3aXXB, S3bXXB, and S3dXXB on nozzles 1B thru 65B. VT-1 examination of welds S3c4B, S3d4B, S3c62B, and S3d62B. No indications identified.
	2003 (2R07)	EVT-1	EVT-1 examination of welds S1A, S1B, S2aA, S2bA, S2aB, S2bB S4aA, S4bA, S4aB, and S4bB per BWRVIP-18. No indications identified.
		VT-1	VT-1 examination of welds S3aXXC, S3bXXC, and S3dXXC on nozzles 1C thru 65C. No indications identified.
	2005 (2R08)	EVT-1	EVT-1 examination of welds S1A, S1C, S1D, S2aA, S2aC, S2bC, S2aD, S2bD, S4aA, S4bA, S4aB, S4bB, S4aC, S4bC, S4aD, and S4bD per BWRVIP-18. No indications identified.
		VT-1	VT-1 examination of welds S3aXXD, S3bXXD, and S3dXXD on nozzles 1D thru 65D. VT-1 examination of welds S3c4D, S3d4D, S3c62D, and S3d62D. No indications identified.
	2007 (2R09)	EVT-1	EVT-1 of S1A, S1B, S2aA, S2aB, S2bA, S2bB, S4aA, S4aB, S4bA, and S4bB was performed. No indications were identified
Core Spray Sparger Brackets	1999 (2R05)	VT-1	VT-1 examination of sparger brackets SB1, SB2, and SB3. No indications identified.
	2001 (2R06)	VT-1	VT-1 examination of sparger brackets SB4 through SB12. No indications identified.
	2003 (2R07)	VT-1	VT-1 examination of sparger brackets SB1 through SB6. No indications identified.
	2005 (2R08)	VT-1	VT-1 examination of sparger brackets SB7, SB8, and SB9. One indication, a slightly bent sparger bracket, was identified on SB8 and was evaluated as acceptable.
	2007 (2R09)	VT-1	VT-1 examination of sparger brackets SB1, SB2, SB3, SB4, SB5, SB6, SB8, SB10, SB11, and SB12 was performed. The middle bracket of SB5 was identified as being offset to the right of the top bracket. This was evaluated as acceptable. SB8 was re-inspected with no change in condition from 2R08.
Top Guide (Rim, etc.)	1991 (2R01)	VT-3	VT-3 examination of accessible welds and surfaces. No indications identified.
	1993 (2R02)	VT-3	VT-3 examination of accessible welds and surfaces. No indications identified.
	1995 (2R03)	VT-1	VT-1 examination of accessible welds and surfaces at cells 14-23, 22-31, 22-39, 38-23, and 38-47.
		VT-3	VT-3 examination of 32 wedges, bolts, and keepers. No indications identified.
	1999 (2R05)	VT-3	VT-3 examination of surfaces at cell locations 26-27 & 30-31 and VT-3 examination of radial restraints, 32 wedges, bolts, and keepers. No indications identified.
	2005 (2R08)	VT-3	VT-3 examination of all four Top Guide C-Clamps. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Limerick Generating Station, Unit 2 - Spring 2007 Update**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Plate (Rim, etc.)	1995 (2R03)	VT-3	VT-3 examination of accessible welds and surfaces at core locations 14-23, 22-31, 22-39, 38-23, and 38-47. No indications identified.
	1999 (2R05)	VT-3	VT-3 examination of accessible welds & surfaces at core plate location 30-31. No indications identified.
SLC			N/A, SLC connects to Core Spray System. (See summary of Instrument Penetrations)
Jet Pump Assembly	1991 (2R01)	VT-3	VT-3 examination of all 20 Jet Pump assemblies. No indications identified.
	1993 (2R02)	VT-3	VT-3 examination of all 20 Jet Pump assemblies. No indications identified.
	1995 (2R03)	VT-3	VT-3 examination of all 20 Jet Pump assemblies. No indications identified.
	1999 (2R05)	VT-3	VT-3 examination of all 20 Jet Pump assemblies. No indications identified.
		UT	UT examination of all 20 Jet Pump hold down beams per BWRVIP-41. No indications identified.
		EVT-1	EVT-1 examination of welds RS-1, RS-2 and RS-3 per BWRVIP-41 on Jet Pumps 11 - 20. No indications identified.
	2001 (2R06)	EVT-1	EVT-1 examination of RB-1 and RB-2 welds on Jet Pumps 1 - 4. EVT-1 examination of IN-4 and MX-2 welds on Jet Pumps 2 - 4. EVT-1 examination of RS-1, RS-2, RS-6, RS-7, RS-8, and RS-9 welds of Jet Pumps 3 - 4. No indications identified.
	2003 (2R07)	EVT-1	EVT-1 examination of welds RS-1 and RS-2 welds on Jet Pumps 1, 2, 5, and 6. EVT-1 examination of RS-3 welds on Jet Pumps 1 - 10. EVT-1 examination of welds RS-6, RS-7, RS-8, and RS-9 on Jet Pumps 1, 2, 5, 6, and 11 - 14. EVT-1 examination of IN-4 and MX-2 on Jet Pumps 1, 5, 6, and 11 - 14. No indications identified.
	2005 (2R08)	UT	UT examination of all 20 Jet Pump hold down beams (BB-1, BB-2, and BB-3) per BWRVIP-41. Supplemental EVT-1 of the BB-2 location on Jet Pumps 1 and 2 due to UT fixture seating issues on the 90-degree placement only. No indications identified.
		EVT-1	EVT-1 examination of RS-3 welds on Jet Pumps 11 - 14. EVT-1 examination of RB-1 welds on Jet Pumps 7 through 10. EVT-1 examination of RB-2 welds on Jet Pumps 7 and 8. EVT-1 examination of RS-1, RS-2, RS-6, and RS-7 welds of Jet Pumps 7 - 10. EVT-1 examination of IN-4 and MX-2 welds of Jet Pumps 7 and 8. EVT-1 examination of RS-8 and RS-9 welds of Jet Pumps 1 - 4, 7 - 14, and 17 - 20. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 2 - Spring 2007 Update

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Continued)	2005 (2R08) (Continued)	VT-1	<p>A VT-1 examination of 8 wedges (WD-1 on Jet Pumps 2, 6 - 10, 16, and 18) in the original scope identified significant wedge wear. The scope was expanded to all remaining wedges and setscrew gaps (AS-1 and AS-2) were measured on all 20 Jet Pumps. Jet Pumps 1, 2, 4, 8, 10 - 14, 17, 19, and 20 showed main wedge wear and set screw gaps were identified on all Jet Pumps with the exception of Jet Pump 3, 6, and 7. The largest setscrew gap was 31 mils on Jet Pump 18 (with no wear). For those wedges that had identified wear, MX-7, WD-2a/b, RS-8, and RS-9 welds were examined with no further degradation identified. Jet Pump slip joint clamps were installed on all 12 Jet Pumps with identified wear. Also, 13 Auxiliary wedges were installed where gaps exceeded the acceptance criteria.</p>
	2007 (2R09)	EVT-1	<p>EVT-1 inspection was performed on the RS-6 welds of JP 1, 9, 11, 17, and 19 and on the RS-7 welds of JP 2, 4, 8, 12, 14, and 20.</p> <p>EVT-1 inspection was performed on the RS-8 and RS-9 welds of JP 1/2, 3/4, 7/8, 9/10, 11/12, 13/14, 17/18, and 19/20.</p> <p>EVT-1 inspection was performed on RB-2 welds on JP 9/10, and RB-1 and RB-2 welds on JP 15/16. Also, RB-1a and RB-1c welds on JP 17/18 were examined by EVT-1.</p> <p>EVT-1 inspection was performed on RS-1 and RS-2 welds on JP 17/18.</p> <p>No indications were identified.</p>
	2007 (2R09) (Continued)	VT-1	<p>A VT-1 examination of all 20 main wedges (WD-1) was performed. The main wedges associated with JP 1, 12, 17, and 20 were replaced with an oversized wedge and the corresponding restrainer brackets were resurfaced. 10 of 12 jet pumps with previously identified wedge wear from 2R08 showed minor additional wedge wear in 2R09 even though a slip joint clamp was installed. JP 9 main wedge was identified with new wedge wear (low) but had no wedge wear identified in the previous cycle.</p> <p>All setscrews were inspected for gaps, except for JP 14. Gaps were identified on the vessel side of JP 4, 5, 7, 9, and 20 with the largest gap being 0.030 inch (JP 7).</p> <p>For those wedges that had newly identified wedge wear (JP 9) or additional wedge wear (JP 1, 2, 4, 8, 11, 12, 14, 17, 19, and 20), the MX-7, WD-2a/b, RS-6 or RS-7, RS-8 and RS-9 welds, as applicable, were examined as required expanded scope. Minor wedge rod wear was identified on JP 2, 4, 9, 11, and 19. No other indications were identified.</p>

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 2 - Spring 2007 Update

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Jet Pump Assembly (Continued)		VT-3	<p>A VT-3 examination was performed on all previously install Auxiliary Wedges (AW) and Slip Joint Clamps (SJC).</p> <p>Minor wear was identified on the AW installed on JP 1, 10, 11, and 13.</p> <p>Aux wedges were removed and not reinstalled on JP 1 and 17.</p> <p>Aux wedges were installed on both the vessel side and shroud side of JP 2, 4, 11, 14, and 19. One aux wedge was installed on the vessel side of JP 7 and 9, and one was installed on the shroud side of JP 12 after reassembly identified a 0.043 inch gap.</p> <p>Jet Pump SJC were inspected by VT-3 with no indications and were installed on JP 3, 5, 6, 7, 9, 15, 16, and 18. All 20 jet pumps now have a SJC installed.</p>
Jet Pump Diffuser	1991 (2R01)	VT- 3	VT-3 examination of all 20 Jet Pump assemblies. No indications identified.
	1993 (2R02)	VT- 3	VT-3 examination of all 20 Jet Pump assemblies. No indications identified.
	1995 (2R03)	VT- 3	VT-3 examination of all 20 Jet Pump assemblies. No indications identified.
	1999 (2R05)	VT-3	VT-3 examination of all 20 Jet Pump assemblies. No indications identified.
	2001 (2R06)	EVT-1	EVT-1 examination of DF-1, DF-2, AD-1, and AD-2 welds on Jet Pumps 2 - 4. No indications identified.
	2003 (2R07)	EVT-1	EVT-1 examination of DF-1, DF-2, AD-1, and AD-2 welds on Jet Pumps 1, 5, 6, and 11 - 14. No indications identified.
	2005 (2R08)	EVT-1	EVT-1 examination of DF-1, DF-2, AD-1, and AD-2 welds on Jet Pumps 7 and 8. No indications identified.
	2007 (2R09)	EVT-1	EVT-1 examination of DF-1, DF-2, AD-1, and AD-2 welds on JP 9, 10, and 15. No indications identified.
CRD Guide Tube	1991 (2R01)	VT-3	VT-3 examination of control rod assemblies at core positions 22-14 and 14-31. No indications identified.
	1993 (2R02)	VT-3	VT-3 examination of control rod assembly at core location 34-07. Minor scratches noted. Acceptable for continued service.
	1995 (2R03)	VT-3	VT-3 PSI examination of replacement CRDs at core locations 06-19, 10-27, 10-47, 14-39, 18-03, 18-15, 18-55, 22-35, 22-39, 30-51, 34-47, 38-15, 38-27, 38-39, 42-43, 46-39, 46-43, 50-15, and 54-35. No indications identified.
	1999 (2R05)	VT-3	VT-3 examination of CRD guide tube accessible surfaces of 26-27 from ID and 30-31 from OD. No indications identified.
	2003 (2R07)	EVT-1/VT-3	CRD guide tube welds were examined at core locations 06-19, 06-43, 18-43, 22-31, 30-23, 30-39, 38-31, 42-19, 42-43, and 54-43. This includes a VT-3 of CRGT-1 welds, an EVT-1 of CRGT-2 and CRGT-3 welds, and a VT-3 of CR/FS/GT - ARPIN-1 welds for the above locations. No indications identified.
	2007 (2R09)	EVT-1/VT-3	CRD guide tube welds were examined at core locations 18-27, 18-35, 26-27, 42-27, and 42-35. This includes an EVT-1 of CRGT-2 and CRGT-3 welds. A VT-3 of the CRGT-1 and ARPIN-1 welds was credited via CRB removal/reinstallation procedure. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 2 - Spring 2007 Update

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
CRD Stub Tube	1993 (2R02)	VT-3	VT-3 examination of stub tube to vessel weld and stub tube to housing weld at azimuth 300 deg. No indications identified.
	1999 (2R05)	VT-3	VT-3 examination at core location 30-31, 30-35, 26-31 & 34-31. No indications identified.
	2007 (2R09)	Best effort VT-1 / VT-3	Best effort VT-1 / VT-3 of stub tube to vessel welds and stub tube to housing welds at core locations 02-39, 02-43, 06-47, 10-11, 14-07, 14-11, 38-59, 42-59, and 46-55 were examined via access through the disassembly of Jet Pumps 1, 12, and 17. No indications were identified.
In-Core Housing	1999 (2R05)	VT-3	VT-3 examination of housings, guide tubes, stabilizers & housing to RPV welds at core locations 24-29 & 32-29. No indications identified.
Dry Tube	1995 (2R03)	VT-1	VT-1 examination of accessible portions of upper 2 feet of dry tube at core locations 16-21, 40-21, 40-45, 24-29, 24-37, and 32-37. No indications identified.
	1999 (2R05)	VT-1	VT-1 examination of accessible portions of upper 2 feet of dry tube at core locations 24-29 & 32-29. No indications identified.
	2005 (2R08)	VT-1	VT-1 examination of accessible portions of upper 2 feet of dry tube at core locations 16-13, 16-21, 16-45, 24-29, 40-21, and 48-13. No indications identified.
	2007 (2R09)	Replaced	IRM 24-29, 24-37, 32-39, 48-53, and SRM 16-45, 40-21 were replaced with new universal style dry tubes. The remaining 6 are scheduled for replacement in 2009 (2R10).
Instrument Penetrations	1991 (2R01)	VT-3	VT-3 examination of interior attachment of instrument nozzles N11A, N11B, and N12A through N12D. No indications identified.
		PT	PT examination performed on all instrument nozzle to safe end welds once per interval, per Section XI (Includes N10 Core Differential Pressure penetration). No indications identified.
	1999 (2R05)	UT/PT	UT & PT examination of jet pump instrument nozzle to safe end N8A & N8B. No indications identified.
Vessel ID Brackets	1991 (2R01)	VT-1/VT-3	VT-1 or VT-3 performed on all ID bracket welds once every other outage per Section XI. No indications identified.
	1993 (2R02)	VT-1/VT-3	VT-1 or VT-3 performed on all ID bracket welds once every other outage per Section XI. No indications identified.
	1995 (2R03)	VT-1/VT-3	VT-1 or VT-3 performed on all ID bracket welds once every other outage per Section XI. No indications identified.
	1997 (2R04)	VT-1/VT-3	VT-1 or VT-3 performed on all ID bracket welds once every other outage per Section XI. No indications identified.
	1999 (2R05)	VT-3	VT-3 examination of feedwater sparger brackets (5, 55, 65, 115, 125, 175, 185, 235, 245, 295, 305 & 355 DEG), including bracket weld to RPV. No indications identified.
	2001 (2R06)	EVT-1	EVT-1 examination of feedwater sparger brackets at 5 degrees and 175 degrees, and core spray sparger brackets at 274.5 degrees and 345 degrees. No indications identified.
	2003 (2R07)	EVT-1	EVT-1 examination of feedwater sparger brackets at 65 degrees and 115 degrees; core spray sparger brackets at 165 degrees, 195 degrees, and 247.5 degrees; steam dryer support brackets at 4 degrees and 94 degrees; and jet pump riser brace arm attachment welds at jet pumps 1/2, 3/4, 5/6, 11/12, and 13/14. No indications identified.
		VT-1	VT-1 examination of the 30 degree surveillance sample holder attachment to vessel weld. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 2 - Spring 2007 Update

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Vessel ID Brackets (Continued)	2005 (2R08)	EVT-1	EVT-1 examination of feedwater sparger brackets at 55 degrees and 125 degrees; core spray sparger brackets at 15 degrees, 85.5 degrees, and 112.5 degrees; and jet pump riser brace arm attachment welds at jet pumps 7/8 and 9/10. No indications identified.
		VT-3	VT-3 examination of guide rod bracket attachment welds at 0 degrees and 180 degrees. No indications identified.
	2007 (2R09)	EVT-1	EVT-1 examination was performed for core spray piping brackets at 274.5 Az. and 345 Az, feedwater sparger end brackets at 185 Az. and 235 Az., and jet pump riser brace arm attachment welds at JP 15/16. No indications were identified.
		VT-1	VT-1 examination was also performed on jet pump riser brace arm attachment welds at JP 15/16 (for Code credit), and at the upper and lower surveillance specimen brackets at 120 Az. and 300 Az.
		VT-3	VT-3 examination was also performed on core spray piping brackets at 274.5 Az. and 345 Az, and feedwater sparger end brackets at 185 Az. and 235 Az.(for Code credit). No indications were identified.
LPCI Coupling	1991 (2R01)	VT-3	VT-3 examination of all 4 couplings. No indications identified.
	1995 (2R03)	VT-3	VT-3 examination of all 4 couplings. No indications identified.
	1999 (2R05)	VT-3	VT-3 examination of all 4 couplings. No indications identified.
	2001 (2R06)	EVT-1	EVT-1 examination of 'C' and 'D' LPCI 45-3b welds. No indications identified.
	2003 (2R07)	EVT-1	EVT-1 examination of 'A' and 'B' LPCI 45-3b welds and EVT-1 examination of 'A', 'B', 'C', and 'D' LPCI 45-12 welds. No indications identified.
	2005 (2R08)	EVT-1	EVT-1 examination of 'A', 'B', 'C', and 'D' LPCI 45-3b and 45-12 welds. No indications identified.
		VT-3	VT-3 examination of 'D' LPCI 45-6a through 45-6d welds. No indications identified.
		VT-1	VT-1 examination of 'D' LPCI 45-8a through 45-8d welds. No indications identified.
	2007 (2R09)	EVT-1	EVT-1 examination of 'C' and 'D' LPCI couplings (45-3b and 45-12) welds was performed. No indications identified.
		VT-3	VT-3 examination of 'C' LPCI 45-6a through 45-6d welds. No indications identified.
	VT-1	VT-1 examination of 'C' LPCI 45-8a through 45-8d welds. No indications identified.	
Steam Dryer	1995 (2R03)	VT-3	VT-3 examination of overall Steam Dryer assembly. Linear indications were identified in the support ring during the VT-1 of the adjacent drain channel welds. These indications were accepted by engineering evaluation.
Steam Dryer (Continued)	1997 (2R04)	UT	UT examination performed to determine baseline crack depth of indications observed visually between 0 degree azimuth and 41 degree lifting eye during 2R03. Results show crack to be 0.384 inches in depth. These indications were accepted by engineering evaluation.
		VT-3	VT-3 examination of overall Steam Dryer assembly. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Limerick Generating Station, Unit 2 - Spring 2007 Update

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	1999 (2R05)	VT-3	VT-3 examination of overall Steam Dryer assembly. Examination revealed cracking in upper support ring at 135 degree and 315 degree lifting lugs. These indications were accepted by engineering evaluation.
	2001 (2R06)	VT-1	VT-1 examination of Steam Dryer Drain Channel welds. No indications identified.
	2003 (2R07)	VT-3	VT-3 examination of overall Steam Dryer assembly. No indications identified.
		VT-1	VT-1 examination of Steam Dryer Drain Channel welds. No indications identified.
	2005 (2R08)	VT-1	VT-1 examination of Steam Dryer Drain Channel welds. VT-1 examination of Steam Dryer Hood Bank #1 and Bank #6 seam welds. VT-1 examination of Steam Dryer Cover Plate welds at 90 degree and 270 degree. No indications identified.
	2007 (2R09)	Best Effort VT-1	<p>Performed Best Effort VT-1 inspections of bottom hood seam welds (SDBH 1a-b, 2a-b, 3a-b, 4a-b, 5a-b, 6a-b), end bank welds (SDEB 1a-d, 2a-d, 3a-d, 4a-d, 5a-d, 6a-d), guide bracket at 0 Az (SDGB), hood vertical seam welds (SDHS 2b-d, 3b-d, 4b-d, 5b-d), hood reinforcement welds (SDHSR 2a-d, 3a-d, 4a-d, 5a-d), welds on all four lifting rods (SDLRx 1a-c, 2a-b, 3a-b, 4a-b, CP, LE, TW), man way welds (SDMW a-d), plenum partition welds (SDPP 2a-b, 3a-b, 4a-b, 5a-b), support ring (SDSR), and tie bars (SDTB 1-5, 8-9, 17, 22-24).</p> <p>Minor IGSCC identified on the support ring and evaluated as acceptable. A small piece of raised metal was identified on SDTB 3 and evaluated to be acceptable. One indication approximately 1.5 inches in length was identified and evaluated as acceptable on SDHS4c weld near the intersection of the bottom of the hood seam and the horizontal joining plate. No other indications identified.</p>

REACTOR INTERNALS INSPECTION HISTORY

Plant: Oyster Creek Generating Station

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer	Fall 2006	Visual	<p>Re-inspect Steam Dryer Indications identified during previous outages.</p> <p>EVT-1 cracks in hold-down area from 1R19.</p> <p>VT-1 all 4 lifting lugs and EVT-1 indications on 135 deg. lug.</p> <p>BWRVIP-139 required inspections (top side) completed. New fatigue indications were identified that required repair. Dryer repair project completed with 2 areas stop drilled and one crack in center baffle plate was cut out.</p>
Core Shroud	Fall 2006	EVT-1	<p>V-9 inspection of ID and OD. Two horizontal indications (transverse to the weld) were found adjacent to vertical weld on the ID surface. The indications were 2.75 and 1 inch in length and 30 and 35 inches above horizontal weld H5. A technical evaluation was completed to use-as-is.</p> <p>VT-3 Tie-Rods at 170 deg, 220 deg and 310 deg. No findings.</p> <p>VT-1 of Upper Bracket to Shroud Ledge interface on all 10 Tie Rods. No findings.</p>
	Fall 2004	None	No Examinations Required.
	Fall 2002	None	No Examinations Required.
	Fall 2000	EVT-1	V-3, V-4, V-15 and V-16. This was a one sided exam from the OD. No findings.
	Fall 1998	UT EVT-1	<p>V-7, V-8, V-10 and V-12. V-11 I.D. Seven tie-rod assemblies baseline inspected.</p> <p>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.</p> <p>The following vertical welds could not be located. V-3, V-4, V-15 and V-16.</p>
Fall 1996	Visual	<p>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.</p>	

REACTOR INTERNALS INSPECTION HISTORY

Plant: Oyster Creek Generating Station

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	Fall 1994	Ultrasonic and visual	Inspected per BWRVIP-01 and 03. Cracks were detected in the Shroud welds H2, H4, H6A, and H6B. Lack of fusion was detected in H3 weld and visual cracks on the ID surface. The Tie Rod modification was installed. Base line visual performed of the tie rods.
Shroud Support	Fall 2006	Visual	EVT-1 of 7 Lug / Clevis pin assemblies - #1, #18, #19, #23, #24, #32 and #33.
	Fall 2004	None	No examinations required.
	Fall 2002	UT	30% UT of H-9 from the OD (Drywell). UT inspected H-9 weld in Nozzle N1A, N1C and N1E bioshield openings. Found one 4" long indication in the N1E nozzle area. This "service induced" indication is in the bottom side of the H9 weld and does not penetrate into the base metal of the RPV.
	Fall 2000	Visual	25% of H-9, cleaning performed and EVT-1 inspection completed. This completes 100% inspection of the H-9 weld. No findings.
	Fall 1998	Visual	25% of H-9, cleaning performed and enhanced VT-1, no findings
	Fall 1996	Visual	25% of H-9, (different area then the 1994 inspection), cleaning performed and enhanced VT-1, no findings.
	Fall 1994	Visual	25% of H-9 cleaning performed and enchanted VT-1, no findings.
Core Spray Piping	Fall 2006	Visual	EVT-1 of annulus piping fillet welds (all 10). No findings. EVT-1 of 25% shroud attachment welds - Pipe Bracket PB 103.5 deg. No findings. EVT-1 of 25% sample butt welds: P4bA, P4cA, P2A, P4g/aA, P4g/bA, P4hA, P4iC, P4g/aC, P4g/bC, P4hC, P4bB, P4eB, P4fB, P4gB and P4hB. No findings.
	Fall 2004	Visual	Accessible portions of the annulus piping welds were cleaned using a nylon brush and visual inspections performed utilizing the EVT-1 technique. All accessible portions of the following piping welds were visually inspected: <ul style="list-style-type: none"> • L-3, L-3A, L-4, L-20A, L-13A, L-5, L-7, L-8, L-10, L-11, and L-12 • U-3, U-3A, U-4, U-15A, U-24A, U-7, U-8, U-9, U-10, U-11, U-12, U-16, and U-17
	Fall 2002	Visual	100% of annulus pipe brackets at 15°, 105°, 195° and 285°. No findings. EVT-1 of all creviced welds in the annulus piping = U3, U3A, U4, U15A + U24A; L3, L3A, L4, L13A + L20A.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Oyster Creek Generating Station

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	Fall 2000	Visual	<p>EVT-1 of a 25% sample (11 welds) of the butt welds (non-creviced) not inspected in 17R or 18R:</p> <ul style="list-style-type: none"> • U1,U15,U17,U18,U19,U20 • L1,L9,L13,L16,L20 <p>Inspect 100% of annulus pipe brackets (15°, 105°, 195° and 285°) No Findings.</p> <p>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:</p> <ul style="list-style-type: none"> • L3, L3A, L4, L6, L13A, L14, L15 and L20A • U3, U3A, U4, U7, U8 and U15A <p>100% of annulus pipe brackets 15°, 105° 195° and 285°. No findings.</p>
	Fall 1998	Visual	<p>All creviced welds in the annulus piping; sample (25%) of the non-creviced welds in the annulus piping:</p> <ul style="list-style-type: none"> • L2, L9, L10, L11, L12, L13, L17, L18, L19 and L20 • U2, U5, U6, U13, U14, U15, U21, U22, U23 and U24 <p>Sample (25%) of pipe brackets 285°, 195°</p>
	Fall 1996	Visual	<p>Inspected per BWRVIP- 03. Cleaning of all accessible weld/HAZ surface and performed enhanced VT-1. No findings.</p>
	Fall 1994	Visual and air test	<p>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.</p>
Core Spray Sparger	Fall 2006	Visual	<p>EVT-1 Sparger Pipe End Cap welds S4C - 60 deg., S4C - 240 deg., S4D - 60 deg., and S4D - 240 deg. No findings.</p> <p>EVT-1 "T" box cover plate welds - S1C, S2C (LH), S2C (RH), S1D, S2D (LH) and S2D (RH). No findings.</p> <p>VT-1 spray nozzles - S3a, S3b, S3c-B. No findings.</p> <p>VT-1 of 50% of the sparger bracket welds – SB – 026, 091, 120, 179, 240, 300, and 359 deg. No findings.</p>
	Fall 2004	Visual	<p>Inspected all sparger repair clamps. No findings.</p> <p>Inspected end cap welds S4A-60, S4A-240, S4B-60, and S4B-240. No findings. Inspected sparger brackets SB-055, 065, 150, 208, 235, 271 and 330. No findings</p>

REACTOR INTERNALS INSPECTION HISTORY

Plant: Oyster Creek Generating Station

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	Fall 2002	Visual and Air Test	VT-1 all spargers, nozzles, end cap welds and repair clamps. No findings. No new leaks were identified during the Air Test.
	Fall 2000	Visual and Air Test	All sparger end cap welds were cleaned and EVT-1 inspected. No findings. VT-1 of spargers, repair clamps, and nozzles. No findings. No new leaks were identified during the Air Test.
	Fall 1998	Visual and Air Test	All sparger repair clamps, both spargers.
	Fall 1996	Visual and air test	Inspected per BWRVIP-03. Cleaned end cap welds and performed enhanced VT-1. No findings. Tee box welds are clamped and not accessible to clean or visual. Performed VT-1, (1 mil wire), of sparger piping and nozzles. No findings.
	Fall 1994	Visual and Air Test	Performed VT-1, (1 mil wire) of sparger piping and nozzles. No findings.
	1978 - 1980	Visual	(2) Cracks in sparger piping. Repair clamps installed. Note: Cracking found in sparger in 1978; repaired with clamps. Sparger has been inspected and air tested every outage since then; report submitted to NRC for approval for restart every outage.
Top Guide	Fall 2006	Visual	EVT-1 of selected known flaws in grid beams: #4, VT-3 and VT-6. One area showed no growth, while the other two had grown between 0.25" and 0.75" from the 2002 outage to the 2006 outage. A flaw evaluation was performed to use-as-is.
	Fall 2004	Visual	VT-1 of top guide hold down bolts at 303 and 123 degrees. No findings. EVT-1 of VT-6 crack showed no measurable growth. Could not visually locate two other existing UT indications.
	Fall 2002	Visual	EVT-1 of two existing cracks measured in 18R outage (#3 and #5). No change to crack length identified.
	Fall 2000	Visual	Top guide hold down bolt assembly VT-3 at 33° and 213°. Top guide beam to rim fillet welds VT-1 at 33° and 213°. No findings. VT-1 of two existing cracks (#3 and #5) with cleaning. Both cracks measured on both sides. Crack #5 showed approx. 1" growth. Crack #3 showed no measurable growth.
	Fall 1998	None.	Not required for this outage by analysis.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Oyster Creek Generating Station

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	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 cause.
	Fall 1994	Visual	[Under side of Top Guide] Three additional vertical cracks were detected at mid span locations. Disposition use as is.
	Fall 1992	Visual	[Under side of Top Guide] Two additional vertical cracks were detected at mid span location. Disposition use as is.
	Fall 1991	Visual	[Under side of Top Guide] A vertical crack was detected at mid span location. Disposition use as is.
Core Plate	Fall 2006	None	No exams were required.
	Fall 2004	Visual	No wedge inspections required. Inspected in-core guide tube plugs 04-29, 20-37, and 12-21. No findings.
	Fall 2002	Visual	No inspections needed. Wedges replace hold down bolt inspections.
	Fall 2000	Visual	Visually inspected all 8 wedges to verify integrity after first cycle of operation. All wedges found as installed.
	Fall 1998		Wedges installed. No further exams of core plate were performed.
	Fall 1996	Visual	Inspected top portion only of 18 hold down bolt that were not inspected in fall 1994 and top periphery section at bolt locations. No findings.
	Fall 1994	Visual	Inspected 18 hold down bolt tops only and top periphery at bolt locations inspected. No findings.
Jet Pump Assembly	NA	NA	NA
Jet Pump Diffuser	NA	NA	NA
SLC	Fall 2006	UT	PDI - UT the Liquid Poison Nozzle N12 / SE. No findings.
	Fall 2004	VT-2 pressure test	Inspected insulated nozzle from drywell. No leakage observed.
	Fall 2002	Visual / PT	PT of Liquid Poison Nozzle – No Indications. Inspect insulated nozzle from drywell during RPV pressure test. No leakage observed.
	Fall 2000	VT-2 pressure test	Inspected insulated nozzle from drywell. No leakage observed.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Oyster Creek Generating Station

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	Fall 1998	VT-2 during Code pressure test.	Not made accessible for direct exam.
	Fall 1996	No Inspection Performed.	Not made accessible.
	Fall 1994	No Inspection Performed.	Not made accessible.
CRD Guide Tube	Fall 2006	EVT-1, VT-3	Inspected 4 guide tubes. No findings.
	Fall 2004	EVT-1, VT-3	Inspected 4 guide tubes. No Findings.
	Fall 2002	EVT-1, VT-3	Inspect 1 guide tube (46-43) removed to support stub tube inspection. No findings.
	Fall 2000	VT-1, VT-3	2 guide tubes. No findings.
	Fall 1998	VT-3	15, no findings.
	Fall 1996	No inspection Performed.	Not made accessible.
	Fall 1994	No Inspection Performed	Not made accessible.
CRD Stub Tube	Fall 2006	None	No inspections required.
	Fall 2004	None	No inspections required.
	Fall 2002	VT-1	Visual Inspection of 2 stub tubes found leaking at bottom head in Fall 2000 (42-43 and 46-39). No indications noted.
	Fall 2000	VT-1 VT-2 pressure test	None made accessible. 2 stub tubes found leaking at bottom head (42-43 and 46-39). Performed UT of CRD housing to stub tube welds (J weld) and area of housing to be rolled. No indications. Roll repaired both leaking housings.
	Fall 1998 Fall 1996	No inspection Performed.	Not made accessible.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Oyster Creek Generating Station

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	Fall 1994	No Inspection Performed	Not made accessible.
In-Core Housing	Fall 2006	No inspection performed	Not made accessible.
	Fall 2004	No inspection performed	Not made accessible.
	Fall 2002	No inspection performed	Not made accessible.
	Fall 2000 Fall 1998 Fall 1996 Fall 1994	No inspection performed	Not made accessible.
Dry Tube	Fall 2006	Replacement	Replaced 4 Dry tubes due to service life: IRM-11, 17, 18 and SRM-24.
	Fall 2004	Visual	VT-1 of SRM 24 found tube not fully engaged in top guide. VT-1 of IRM 17 and IRM 18 found both tubes bowed.
	Fall 2002	Visual	No inspections required.
	Fall 2000	Visual	VT-1 five dry tubes. One found slightly bent – use as is. No findings on others.
	Fall 1998	Visual	VT-1 one dry tube, no findings
	Fall 1996	Visual	VT-1 one dry tube, no findings.
	Fall 1994	Visual	VT-1 four dry tubes, no findings.
Instrument Penetrations	Fall 2006	Visual	VT-2 exam from vessel exterior. No findings.
	Fall 2004		
	Fall 2002		
	Fall 2000		
	Fall 1998		
	Fall 1996 Fall 1994		
Vessel ID Brackets	Fall 2006	EVT-1	EVT-1 both Guide Rod Brackets. EVT-1 all 3 Surv. Spec. Brackets. No findings.
	Fall 2004	EVT-1	Inspected all 4 dryer support brackets. No findings.
	Fall 2002	EVT-1	All feedwater sparger attachment brackets. Both guide rod attachment brackets. All surveillance sample brackets (30, 210 and 300 degree locations) No indications on attachment welds.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Oyster Creek Generating Station

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	Fall 2000	EVT-1	All 4 dryer support brackets. Observed wear indications on brackets. No indications on attachment welds. All feedwater attachment brackets inspected. No indications on attachment welds. Cracks observed on feedwater sparger to end bracket welds (non-safety-related component) on 2 ends.
	Fall 1998 Fall 1996 Fall 1994	VT-1	VT-1 of accessible portions of weld on guide rod brackets, steam dryer brackets, surveillance sample brackets. All attachment welds; no findings.
LPCI Coupling	NA	NA	NA
Fuel Support Casting	Fall 2006	Visual	None inspected.
	Fall 2004	Visual	None inspected.
	Fall 2002	Visual	None inspected.
	Fall 2000	Visual	VT-3 (2) support casting. No findings.
	Fall 1998	Visual	VT-3 (24) support castings. No findings.
	Fall 1996	Visual	VT-3 (25) support castings. No findings.
	Fall 1994	Visual	VT-3 (17) support castings. No findings.

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

REACTOR INTERNALS INSPECTION HISTORY

Plant: Peach Bottom Atomic Power Station, Unit 2, 2006 UPDATE

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	<p>Comprehensive UT Baseline of some Category "C" circumferential welds (H-2, H-3, H-4, and H-5) per BWRVIP-01, Rev. 0.</p> <p>Partial UT baseline of welds H-1, H-6, and H-7, w/ partial Enhanced VT-1 of H-6 OD.</p> <p>Exams per BWR-VIP Core Shroud NDE Uncertainty and Procedure Standard, dated November 21, 1994.</p> <p>Indications identified on ID of H-1, H-3, H-4, and H-6, and OD of H-4 and H-5.</p> <p>Full structural margins calculated using two cycles of crack growth for comprehensively examined welds, one cycle for welds with limited exams.</p> <p>No indications identified on H-2 and H-7.</p>
	1996	UT	<p>Comprehensive UT of welds H-1, H-6 and H-7 per BWRVIP-01, Rev. 1.</p> <p>Exams per BWRVIP-03.</p> <p>Indications identified on ID of welds H-1, H-6 and H-7, on OD of weld H-1.</p> <p>Full structural margins calculated using two cycles of crack growth.</p> <p>Reexaminations planned per BWRVIP-76</p>
	2002	UT	<p>Comprehensive UT of welds H-1 through H-7 per BWRVIP-76.</p> <p>Indications identified on each weld.</p> <p>UT of Vertical welds V-1 through V-4.</p> <p>No indications identified.</p> <p>Reexaminations scheduled per BWRVIP-76.</p>
Shroud Support	1992	VT-3	<p>VT-3 examination of support leg stub welds.</p> <p>No indications identified.</p> <p>VT-3 examination of welds H-7, H-8, and shroud support cylinder.</p> <p>No indications identified.</p>
	1994	VT-3	<p>VT-3 of accessible portions of H-8 weld between Jet Pump #1 and #10.</p> <p>No indications identified.</p>
		VT-1	<p>VT-1 examination around perimeter of 0 deg. access hole cover.</p> <p>No indications identified.</p>
		UT	<p>UT examination of both access hole covers. No indications identified.</p>
	1998	EVT-1	<p>EVT-1 examination of both AHCs. No indications identified.</p> <p>EVT-1 of 10% of shroud support weld H-8, top side, no indications identified.</p> <p>EVT-1 of 10% of shroud support weld H-9, top side, no indications identified.</p>

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Peach Bottom Atomic Power Station, Unit 2, 2006 UPDATE**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	2000	EVT-1 VT-3	EVT-1 examination of both AHCs. No indications identified. VT-3 of accessible portions of H-9 weld between 0° and 180° Azimuth. No indications identified.
	2002	UT	UT of 10% of H-9 weld length from OD of vessel. No indications identified.
	2004	EVT-1 VT-3	EVT-1 of > 10% of shroud support weld H-8, top side, between jet pumps 10 – 11 and 1 – 20. No indications identified. VT-3 of accessible portions of H-9 weld between 180° and 360°. No indications identified
Core Spray Piping	1980 to 1996	VT-1 (1 mil)	Enhanced VT-1 (1 mil resolution) performed on piping and welds each refueling outage per IEB 80-13, No indications identified.
	1996	VT-1 (1/2 mil)	EVT-1 (1/2 mil resolution) performed on annulus piping welds per BWRVIP-18. Cracking identified in "B" Header tee-box cover plate weld (P2B). UT performed to characterize indication. Evaluation demonstrated structural margin for one operating cycle.
	1998	EVT-1 & UT	Reinspection per BWRVIP-18, using UT technique. EVT-1 used to supplement UT. No new indications identified. P2B weld reexamination yielded additional margin.
	2000	EVT-1	EVT-1 of nine (9) piping welds not previously UT'd, and of six (6) pipe brackets and attachment welds. No indications identified.
	2002	EVT-1 & UT	Reinspection per BWRVIP-18, using UT technique (28 welds). EVT-1 used to supplement UT (6 welds). EVT-1 on two (2) support brackets. No new indications identified. P2B weld indication reexamination revealed minimal growth.
	2004	EVT-1	EVT-1 of twelve (12) piping welds not accessible for UT inspection. No indications identified
	2006	EVT-1 & UT	Reinspection per BWRVIP-18, using UT technique (24 welds). EVT-1 used to supplement all one-sided UT (12 welds). EVT-1 only on eight (8) pipe welds and six (6) support brackets. P2B weld indication reexamination revealed no growth. New 9/16" indication identified visually at intersection of P3B1 and P2B welds.
Core Spray Sparger	1980 to 1994	VT-1 (1 mil)	Enhanced VT-1 (1 mil resolution) performed on piping and welds each refueling outage per IEB 80-13, Cracking discovered at tee-box to sparger pipe weld ("B" Sparger, 1982), bolted repair clamp installed. No other indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Peach Bottom Atomic Power Station, Unit 2, 2006 UPDATE

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	1998	VT-3 & MVT-1	Reinspections per BWRVIP-18, no indications identified.
	2000	EVT-1	EVT-1 of selected sparger welds per BWRVIP-18. No indications identified.
		VT-1	VT-1 of sparger tee-box repair clamp, and approx. 50% of sparger "C" and "D" nozzles and drains. VT-1 of eleven (11) sparger brackets and welds. No indications identified.
	2002	VT-1, EVT-1	VT-1 of six (6) sparger support brackets, one (1) tee box repair clamp, and 50% of sparger "A" and "B" nozzles and drains. EVT-1 of seven (7) sparger pipe welds. No indications identified.
	2004	VT-1, EVT-1	VT-1 of six (6) Sparger support bracket welds, one (1) sparger drain, and 50% of nozzles on spargers "C" and "D". EVT-1 of fifteen (15) Sparger pipe welds. No indications identified.
	2006	VT-1, EVT-1	VT-1 of six (6) sparger support brackets, one (1) tee box repair clamp, and 50% of sparger "A" and "B" nozzles and drains. EVT-1 of eight (8) sparger pipe welds. No indications identified.
Top Guide (Rim, etc.)	1976 to 1994	VT-3	VT-3 exam every other refueling outage per Section XI. No indications identified.
	1987	UT	UT examination performed of specific cells. No indications identified.
	1994	VT-3	Visual (VT-3) examination of 4 cells (48-41, 08-25, 24-17, and 24-25), per SIL 554. No indications identified.
	1996	VT-3	Visual (VT-3) of 2 aligner pins (0 deg. And 270 deg.), per SIL 588. No indications identified.
Core Plate (Rim, etc.)	1996	VT-3	VT-3 examination of all accessible hold down bolts (cell 16-57, and area at 0 and 270 deg. Azimuth). No indications identified.
SLC	1992	PT	Surface (PT) examination of nozzle to safe end weld per Section XI. No indications identified.
	1998	PT & UT	PT and UT of N10 nozzle to safe-end, no indications identified.
	2002	PT	Extended dwell time Liquid Penetrant examination of entire safe end. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Peach Bottom Atomic Power Station, Unit 2, 2006 UPDATE**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	2006	PT	Extended dwell time Liquid Penetrant examination of entire safe end. No indications identified.
Jet Pump Assembly	1976 - 1996	VT-3	Visual VT-3 of all jet pump components performed every other refueling outage.
	1981	VT & UT	VT and UT examination performed on all 20 hold down beams. No indications identified.
	1994	VT	Restrainer bracket wedge misalignment and wear identified on several wedges. Evaluations found condition acceptable without repair. One restrainer bracket set screw tack weld found cracked. Evaluations found condition acceptable without repair.
	1996	VT	Restrainer bracket wedge conditions and set screw tack welds remain unchanged, condition acceptable without repair.
	1998	MVT-1 UT	MVT-1 of: RS-1 weld on all 10 risers, RS-2 & RS-3 welds on 6 of 10 risers. No indications identified. UT of all 20 hold down beams. No indications identified.
	2000	EVT-1	EVT-1 of adjusting screw tack weld (jet pump 7) and RS-2 & RS-3 on 5 of 10 risers. No indications identified.
	2002	EVT-1	EVT-1 of fifty (50) Medium priority weld locations. EVT-1 of transition region of two (2) hold down beams. No indications identified
	2004	EVT-1 UT VT-1	EVT-1 of forty one (41) medium priority welds, to complete 50% baseline inspections. No indications identified. UT performed on all twenty (20) hold down beams (3 zones, BB-1, BB-2, and BB-3). No indications identified. VT-1 on all twenty (20) Inlet Mixer main wedges. Thirteen (13) jet pumps exhibited additional wear at main wedge-to-restrainer bracket interface. Performed expanded scope of inspections on these jet pumps. Set screw gaps identified at five (5) jet pumps. No additional problems identified. Installed eight (8) slip joint clamps and three (3) set screw auxiliary spring wedges, to mitigate wear believed to be caused by vibration.
	2006	VT-1, EVT-1, VT-3	VT-1 of twenty (20) WD-1 locations. EVT-1 of five (5) IN-4 welds, and two (2) riser braces-to-vessel attachment welds. VT-3 of eight (8) Slip Joint Clamps and three (3) Auxiliary Spring Wedges. Expanded EVT-1 scope on three (3) jet pumps due to WD-1 findings.
Jet Pump Diffuser	1998	MVT-1	MVT-1 of: AD-1 & AD-2 welds on 12 of 20 pumps, AD-3A & B welds on 11 of 20 pumps, and DF-2 weld on 10 of 20 pumps. No indications identified.
	2000	EVT-1	EVT-1 of AD-1, -2, -3a, -3b, and DF-2 on jet pumps 1 through 10. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Peach Bottom Atomic Power Station, Unit 2, 2006 UPDATE

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	2002	EVT-1	EVT-1 of ten (10) High priority weld locations. No indications identified.
	2004	EVT-1	EVT-1 of eleven (11) medium priority weld locations, to complete 50% baseline inspections. No indications identified
	2006	UT	UT of ninety eight (98) Diffuser / Adapter welds and six (6) Inlet Mixer welds. One 2" indication found on DF-2 weld, JP 17.
CRD Guide Tube	1992	VT-3	VT-3 examination of housings accessible from fuel cells 26-31 and 30-27. No indications identified.
	2002	EVT-1, VT-3	EVT-1 of three (3) welds on each of ten (10) Guide Tubes (locations 50-31, 42-11, 42-23, 42-51, 38-27, 38-35, 38-51, 34-23, 34-39, and 30-31). Some flow interference with examinations. VT-3 equivalent of anti-rotation pin on ten (10) Guide Tube locations. No indications identified
	2006	EVT-1, VT-3	EVT-1 of fifteen (15) CRGT welds, VT-3 of five (5) CRGT welds, verification of seventeen (17) CRGT alignment pins. One slightly bent pin identified. No other indications identified.
CRD Stub Tube	1992	VT-3	VT-3 examination of stub tube welds accessible from fuel cells 26-31 and 30-27. No indications identified.
In-Core Housing	1992	VT-3	VT-3 examination of housings accessible from fuel cells 26-31 and 30-27. No indications identified.
Dry Tube			All Dry Tubes replaced in 1984
	1994	VT-1	VT-1 examination of IRM Dry Tube 2D, at core location 37-32.
	1997	N/A	All IRM and SRM tubes replaced w/ Wide Range Monitoring tubes in 1997. No inspections required.
Instrument Penetrations	1976 to present	PT	PT examination performed on all instrument nozzle to safe end welds once per interval, per Section XI. No indications identified.
LPCI Coupling			N/A for this plant
Vessel ID Brackets	1976 to present	VT-1 or VT-3	VT-1 and VT-3 of all ID bracket welds performed once per interval per ASME Section XI. No indications identified.
	2000	EVT-1	EVT-1 of six (6) Core Spray piping brackets. No indications identified.
	2002	EVT-1	EVT-1 of two (2) Core Spray piping brackets, two (2) Steam Dryer support brackets, and five (5) Jet Pump Riser brackets attachment welds. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Peach Bottom Atomic Power Station, Unit 3 2005 UPDATE

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Shroud	1993	VT-1	Enhanced VT-1 (1 mil resolution) (100% ID of H-3, H4, & V-3) portions OD of H-1, H-2, H-3, H-4, H-5, H-6, and H-7 Prior to BWRVIP-01, Circumferential Indications on ID of H-3 and H-4 (Plate side, not ring side) Short circumferential indications on ID of V-3 weld. Evaluation of indications showed full structural margins for one operating cycle.
	1995	UT	Comprehensive UT Baseline of all Category "C" circumferential welds (H-1 through H-7). Baseline per BWRVIP-01, Rev. 1. Exams per BWR-VIP Core Shroud NDE Uncertainty and Procedure Standard, dated November 21, 1994. Indications identified on ID of H-1, H-3, H-4, and H-5. Full structural margins calculated using two cycles of crack growth. No indications identified on H-2, H-6, and H-7.
	1999	UT	UT Examination on welds H-3 & H-4. Re-identified indications on both welds. Extent of indications within existing structural analysis.
	2005	UT	Two-sided UT of all 7 horizontal welds (H1 thru H7) and 4 vertical welds (V3 thru V6). No indications at H2, H7, V4-V6 or ring side of any weld. One minor indication near V3. Indications at H1, H3, H4, and H5 correlated with those previously identified. One indication at H6 (new). One deep indication at H4. Characterized as thru-wall. Review of previous data (1995 and 1999) also characterized indication as thru-wall at that time. EVT-1 on OD surface did not identify any indications.
Shroud Support	1993	VT-1	Enhanced VT-1 (1 mil resolution), of portions of H-8 weld, No indications identified. VT-1 examination around perimeter of both access hole covers, No indications identified.
	1999	EVT-1	10 % of weld length of welds H-8 & H-9 examined. No indications identified.
	2001	UT	10% of H-9 weld length from vessel O.D. No indications identified.
	2005	EVT-1	> 10% of H-8 weld, between jet pump banks, in area of AHCs.
		VT-3	Accessible length of H-9 between 0 and 180 degrees. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Peach Bottom Atomic Power Station, Unit 3 2005 UPDATE

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Core Spray Piping	1980 to present	VT-1 (1 mil)	Enhanced VT-1 (1 mil resolution) performed on piping and welds each refueling outage per IEB 80-13,
	1985		Cracking discovered at tee-box to header pipe weld. Welded repair plates installed on both header tee-boxes.
	1993		Cracking identified in downcomer slip joint (weld P-5), evaluation demonstrated structural margin for one operating cycle.
	1995		Additional cracking identified in 3 of 4 downcomer slip joint welds (P-5), repair clamps installed on all 4 downcomers to repair flawed welds.
	1997	VT-1	4 Downcomer repair clamps, no indications identified.
		EVT-1	All annulus piping welds, no indications identified.
	1999	VT-1	VT-1 Examination of A, B, C & D Downcomer Repair Clamps & both Header Teebox welded repairs. No indications identified.
			All target welds plus 25 % sample of piping butt welds examined. No indications identified.
	2001	VT-1 EVT-1	VT-1 of both header tee box welded repairs, no indications identified. EVT-1 of all target welds plus 25% sample of butt welds examined. No indications identified.
2003	VT-1 EVT-1	Four downcomer repair clamps. Four Header Tee Box strong back repair plate welds. EVT-1 of all target welds plus 25% sample of butt welds. No indications identified.	
2005	EVT-1	Four Header Tee Box strong back repair plate welds. EVT-1 of all target welds plus 25% sample of butt welds. No indications identified.	
Core Spray Sparger	1980 to present	VT-1 (1 mil)	Enhanced VT-1 (1 mil resolution) performed on piping and welds each refueling outage per IEB 80-13, No indications identified.
	1999	EVT-1	Examination performed on all Sparger Pipe welds.
		VT-1	Examination performed on all Brackets, Drains and 50 % of Nozzles. No indications identified.
	2003	EVT-1 VT-1	Examination performed on all Sparger Pipe welds. Examination performed on all Brackets, Drains and 50 % of Nozzles. No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Peach Bottom Atomic Power Station, Unit 3 2005 UPDATE

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Top Guide (Rim, etc.)	1987	UT	UT examination performed on 40 cells. No indications identified.
	1993	VT-3	Visual (VT-3) examination of 9 cells (02-19, 46-11, 42-59, 58-19, 02-39, 10-51, 18-03, 22-03, and 58-35), per SIL 554. No indications identified.
	1995	VT-3	Visual (VT-3) of 3 cells (14-23, 22-31, and 46-23) per SIL 554. No indications identified.
	1976 to present	VT-3	VT-3 examination every other refueling outage per Section XI. No indications identified.
	1997	VT-3 VT-1	Top Guide Grid examined from above, no indications identified. Adjacent aligner pins at 180 and 270 deg.(per VIP-26), no indications identified.
Core Plate (Rim, etc.)	1995	VT-3	VT-3 examination of hold down bolt retainers planned, deferred to 1997.
	1997	VT-1	Examined 18 of 34 bolts/retainers from above. No indications identified.
SLC	1997	UT	UT of nozzle to safe end planned for 1997, per BWRVIP recommendations.
		PT & UT	PT & UT of nozzle to safe-end weld, no indications identified.
	2003	PT	Extended dwell time PT of SLC nozzle to safe end weld and entire safe end. No indications identified.
Jet Pump Assembly	1974 to present	VT-3	Visual VT-3 of all jet pump components performed every other refueling outage. No indications identified.
	1981	VT & UT	VT and UT examination performed on all 20 hold down beams/ One beam found to be cracked, replaced with new style beam, All beams replaced with new style beam and reduced preload in 1988.
	1997	VT-3 CSVT-1 (MVT-1)	VT-3 all 20 jet pump assemblies (all parts),including CSVT-1 (MVT-1) of 10 riser braces, including all welds. No indications identified. CSVT-1 (MVT-1) all 10 thermal sleeve to riser elbow welds, plus UT on pumps 1/ 2, 9/10, 13/14 due to indications on thermal sleeve side of these welds. MVT-1 on welds RS-2 & RS-3 of three risers w/ indications @ 30, 150, and 300 degrees. Evaluation of indications justified continued operation for part cycle.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Peach Bottom Atomic Power Station, Unit 3 2005 UPDATE

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	1999	UT	Examinations performed on all 20 hold down beams. Reportable indications observed on hold down beam for jet pump # 20. Beam replaced. No other indications identified.
		EVT-1	Examination of high priority Adapter welds on Jet Pumps 1-10. Reportable indications on welds (AD-3b) of Jet pumps 2 & 10. BWRVIP -41 evaluation resulted in use-as-is disposition. Expanded examinations to weld AD3b on Jet Pumps 11-20. No other indications identified. EVT-1 examination of high priority Diffuser Shell to Tailpipe Welds (DF-2) of Jet Pumps 1-10. No indications identified. Examination of Riser welds RS-2 & RS-3 of Jet Pump Assemblies 2, 3 & 4. No indications identified.
	2001	EVT-1	Reexamined weld AD-3b on Jet Pumps 2 & 10. indications remain bounded by existing flaw evaluation. All 20 WD-1 locations examined. 16 high priority and 45 medium priority welds on inlet mixers, diffusers, and riser braces also examined. No indications identified.
	2003	VT-1	VT-1 of all twenty hold down beam ratchet lock keepers (replaced in 2001). VT-1 all twenty WD-1 main wedge locations, since all inlet mixers were removed in 2001, Two auxiliary spring wedges installed in 2001, and the RS-1 repair clamp on JP 1 & 2 and 13 & 14. No indications identified.
		EVT-1	Reexamination of indication at RS-1 weld on JP 9 & 10. Minimal change in flaw size. Structural reevaluation completed for continued acceptability. 104% of High priority welds completed. 72% of Medium priority welds completed No indications identified.
	2005	UT	Indication identified in backing ring below AD-3a weld on JP 18. Structural evaluation found acceptable for continued operation.
		VT-1	Two-sided UT of all diffuser and adapter welds (100) from I.D. Identified 4 small OD originating indications associated with the AD-3b fillet weld (2 previously ID'd). Structural and leakage evaluation proved acceptability for numerous operating cycles.
		EVT-1	VT-1 of five main wedges. No wear identified. EVT-1 of 16 medium priority welds. No indications identified. EVT-1 of 3 existing indications. No appreciable change in indication size.
Jet Pump Diffuser			See Jet Pump Assembly.
CRD Guide Tube	1985	VT-3	VT-3 PSI examination of 4 replacement CRD housings.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Peach Bottom Atomic Power Station, Unit 3 2005 UPDATE

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	1987	VT-3	VT-3 examination of one of replaced housings. No indications identified.
	1991	VT-3	VT-3 examination of housings accessible from fuel cells 26-31 and 30-27. No indications identified.
	1999	VT-3	VT-3 examination on Guide Tube welds CRGT-1 & Alignment Pin weld (Core Locations: 14-15, 14-31, 14-47, 18-19, 18-27, 18-35, 18-43, 26-11, 34-35, 42-19) No indications identified.
		EVT-1	EVT-1 examination on Guide Tube welds CRGT-2 & 3 (Core Locations: 14-15, 14-31, 14-47, 18-19, 18-27, 18-35, 18-43, 26-11, 34-35, 42-19) No indications identified.
	2003	EVT-1	Best effort EVT-1 on Guide Tube welds CRGT-2 & 3 (Core locations: 10-35, 22-27, 22-35, 30-23, 30-31, 30-39, 38-27, 38-31, 38-35, and 42-31) No indications identified.
		VT-3	VT-3 examination on Guide Tube welds CRGT-1 & Alignment Pin weld (Core Locations: 10-35, 22-27, 22-35, 30-23, 30-31, 30-39, 38-27, 38-31, 38-35, and 42-31) No indications identified.
	2005	EVT-1	EVT-1 on Guide Tube welds CRGT-2 & 3 (Core locations: 22-39, 38-39, 14-35, 46-35, 46-27, 22-23, and 26-11) No indications identified. CRGT-3 (22-39) later disqualified.
		VT-3	VT-3 examination on Guide Tube welds CRGT-1 & Alignment Pin weld (Core Locations: 22-39, 38-39, 14-35, 46-35, 46-27, 22-23, and 26-11) Alignment pin weld also at 14-27 and 38-23, No indications identified.
CRD Stub Tube	1991	VT-3	VT-3 of accessible portions of 12 stub tubes (30-35, 26-35, 22-35, 22-31, 22-27, 26-27, 26-23, 30-23, 34-23, 34-27, 34-31, 30-31). No indications identified.
In-Core Housing	1991	VT-3	VT-3 of housings accessible from fuel cells 26-31 and 30-27. No indications identified.
Dry Tube	1997	N/A	All Dry Tubes replaced in 1985. All IRM and SRM tubes replaced w/ Wide Range Monitoring tubes in 1997. No inspections required.
Instrument 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.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Peach Bottom Atomic Power Station, Unit 3 2005 UPDATE

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	1997	PT	PT nozzle to safe-end (coupling) & safe-end to pipe welds on 2 nozzles. (N12A & N12B). No indications identified.
	2001	PT	PT nozzle to safe-end (coupling) welds on 2 nozzles. (N11A & N16A). No indications identified.
Vessel ID Brackets	1976 to present	VT-1 or VT-3	VT-1 and VT-3 of all ID bracket welds performed once per interval No indications identified.
	1997	VT-1	All 10 Jet Pump riser brace to vessel welds, no indications identified.
	1999	EVT-1	EVT-1 examination performed on 8 Core Spray Bracket Pads @ 15, 117, 123, 165, 195, 237, 243 & 345 AZ. No indications identified.
	2001	EVT-1	EVT-1 examination performed on 4 Feedwater Sparger brackets @ 4, 56, 64, and 116 Az., 3 Jet Pump Riser Braces @ 90, 120, and 150 AZ., and 2 Steam Dryer Support Brackets @ 4, and 94 AZ. No indications identified.
	2003	VT-1	Lower Surveillance Specimen brackets at 30°, 120°, and 300°.
		VT-3	Upper Surveillance brackets at 30°, 120°, and 300°. Guide Rod brackets at 0° and 180°.
		EVT-1 & VT-3	Steam Dryer support brackets at 184° and 274°.
		EVT-1	Jet Pump riser brace to vessel welds JP 9/10 and JP 13/14. No indications identified.
	2005	EVT-1	8 Feedwater sparger bracket welds and 16 jet pump riser brace welds. No indications identified.
LPCI Coupling			N/A for this plant
Steam Dryer	2003	VT-3	VT-3 of the entire top of the dryer (including all upper tie bars) and the 2 outer bank hoods and cover plates.
		VT-1	VT-1 of 5 new central bank upper tie bars (added in 2001), 2 stop-drilled indications at the lower guide rod followers, and all GE SIL 644, Supp. 1 locations on outer bank hoods. No indications identified. All previous repairs were satisfactory.
	2005	VT-1	Completed all remaining BWRVIP-139 recommended inspections (68 locations). No indications identified.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Quad Cities 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 (BWRVIP-76)	04/94	EVT-1 and UT	Inspections per SIL 572, indications in circumferential welds.
	03/96	EVT-1 and UT	Inspections per BWRVIP Guidelines of all Shroud repair design reliant hardware prior to installation of comprehensive repair (4 GE designed tie-rod assemblies). Inspection of shroud consisted of EVT-1 of all ring segment welds (accessible surfaces), EVT-1 of vertical welds between H1 & H2 OD surface 100% (ID not accessible), UT of all 6 beltline vertical welds >30% length/weld, and EVT-1 of vertical welds between H6 & H7 OD surface >25% length/weld (ID not accessible).
	11/98	VT-1	No Reportable Indications.
	10/00	UT	Future inspections to be in accordance with BWRVIP-76; Reinspection of Repaired Core Shrouds. Shroud repair hardware inspected per GE recommendations. No Reportable Indications.
	11/02	EVT-1	Inspected shroud vertical welds V-14 through V-19, inclusive, in accordance with BWRVIP-76. One recordable indication on V-19 was acceptable to EOI under BWRVIP-76. 6 vertical welds from the OD per BWRVIP-76. No indications. The steam dam above the shroud flange had impact damage evaluated as acceptable as-is for indefinite continued operation.
	04/05	EVT-1	Examined Ring Segment Welds V1-V4 (Shroud Head RSWs), V8-V13 (Top Guide RSWs), and V20-V25 (Core Plate Support RSWs). NRI, but indications notes in HAZ of shroud horizontal weld H-05-OD near core plate support RSWs. (Horizontal welds structurally replaced by shroud tie rod repair). Examined three shroud vertical welds Inaccessible for UT Inspection to gain additional coverage (V17, V18, V19). NRI
	05/07	EVT-1	Examined 6 vertical welds from the OD (V-05, V-06, V-07, V-26, V-27, V-28). NRI
	Shroud Repair Hardware (BWRVIP Letters 2006-112 and 2006-220)	05/07	EVT-1, VT-3

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Quad Cities Unit 1**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Shroud Support (BWRVIP-38)	3/96	EVT-1	EVT-1 of H8 and H9 for approx 12" at 4 locations of shroud repair hardware attachment areas. Access hole covers; VT/UT in 1992, circumferential indications observed, permanent repair installed.
	10/00	EVT-1	Inspected H8 and H9 adjacent to AHC at JP# 10 & 11 in accordance with BWRVIP-38. No reportable indications.
	03/05	EVT-1	Inspected H8 and H9 adjacent to JP# 7 & 20 from annulus top side. Also inspected H8 and H9 adjacent to JP# 7 & 20 from bottom side through disassembled jet pumps.
	05/07	N/A	No inspections performed.
Core Spray Piping (BWRVIP-18)	1980 to 1994	VT-1 (1 mil)	IEB 80-13/NUREG of piping and welds in annulus. Indication previously observed during 1994 on T-box was permanently repaired in 1996. Repair examined 11/98 with no reportable indications.
	04/96	EVT-1	EVT-1 performed to intent of BWRVIP-18 in 1996. Indications observed at two lower elbow welds, full structural margins on non-repaired welds. Future inspections per BWRVIP-18.
	11/98	Auto UT EVT-1	GE CSI-2000 with supplemental EVT-1 for unqualified welds (P8a & P4d). Identified one new flaw at P4d 110° downcomer similar to previously identified flaws at the P4d 260° & 290° downcomers. All flaws were evaluated for at least 48 months of operation with full structural margins without repairs. Previously identified flaws were determined to be of less extent than originally sized.
	10/00	EVT-1	Inspected P8a and P4d welds @ 4 downcomers in accordance with BWRVIP-18. Existing flaws at P4d welds at 110°, 260° and 290° downcomers showed no discernable change from 1998 inspection.
	11/02	UT	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.
			EVT-1
	03/05	EVT-1	Lower Elbow to Shroud Pipe Welds 1P4d, 2P4d, 3P4d, 4P4d. NRI on 1P4d. No change in indications on 2P4d, 3P4d, 4P4d since last exam in 2002 (R17). Collar Weld to Shroud Pipe Welds 1P8a, 2P8a, 3P8a, 4P8a. NRI. Best

REACTOR INTERNALS INSPECTION HISTORY

Plant: Quad Cities Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	05/07	VT-1, VT-3 UT EVT-1	<p>effort on 4P8a. Separator lugs and tie rods limited views on lower half. Supplemental visual to disposition UT indication in base metal from R17. NRI</p> <p>Welds BP1, BP2, BP3, 2P2, 2P3, 3P3 at Tee Box repair (clamp interferes with EVT-1). NRI</p> <p>UT Examination of 36 welds (32 welds in target set plus non-demonstrated exams on P8A welds). Sized previous indications on 2P4d, 3P4d and 4P4d with little or no change from previous. New indications on 2P4a and 4P4a that could not be confirmed visually.</p> <p>Inspected 16 P4 welds; four P8a welds; 3P6, 2p3 and 3P3, BP1 and BP2 at Tee Box repair; Tee Box repair clamp. Measured indications on 2P4d, 3P4d and 4P4d with no change from previous.</p>
Core Spray Sparger (BWRVIP-18)	1980 to 1994 04/96 11/98 11/02 03/05 05/07	VT-1 (1 mil) EVT-1 or VT-3 EVT-1 MVT-1 EVT-1 of S1,S2, & S4;VT-1 of S3;VT-1 of brackets N/A EVT-1	<p>IEB 80-13 of welds on sparger. No indications found.</p> <p>EVT-1 performed to intent of BWRVIP-18, on T-box cover plate welds, T-box to sparger welds, end cap welds and bracket welds. VT-3 of spargers and nozzles.</p> <p>Future inspections per BWRVIP-18.</p> <p>End caps, cover plates and tee branch welds were EVT-1 examined. All sparger connections and bracket welds were MVT-1 examined. No reportable indications.</p> <p>Examined all 20 S1, S2, and S4 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.</p> <p>No examinations performed.</p> <p>Examined all 20 S1, S2, and S4 sparger welds. No indications.</p>

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Quad Cities Unit 1**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Top Guide (Rim, etc.) (BWRVIP-26)	03/94	VT-1	VT-1 of 4 cells. No indications.
	04/96	VT-1	VT-1 of alignment assemblies. No indications.
	11/98	VT-1	VT-1 of alignment assemblies and adjacent rim welds. No reportable indications.
	10/00	EVT-1	Inspected accessible areas of location 11 in accordance with BWRVIP-26. No reportable indications.
	11/02	VT-3	Examined 9 pin welds (FS/GT-ARPIN-1) per BWRVIP-47. No Indications.
	03/05	EVT-1, VT-1	Alignment pin assemblies at 0° and 270°. NRI. EVT-1 of rim weld. Numerous machined holes identified in the horizontal plate adjacent to the rim weld similar to those found on Unit 2.
Core Plate (Rim, etc.) (BWRVIP-25)	N/A	N/A	Installed core plate wedges in conjunction with comprehensive shroud repair 1996.
	11/98	VT-1	Wedges inspected in conjunction with shroud repair hardware. No reportable indications.
	05/07	VT-3	Wedges inspected in conjunction with shroud repair hardware. No reportable indications.
Jet Pump Assembly (BWRVIP-41)	03/94	VT-1	Hold down beams, beam bolt keepers, lockplates and retainers; restrainer wedges, stops, and adjusting screws, clamp bolts and keepers; riser brace assemblies, adapter and baffle plate welds, sensing lines and sensing line brackets per various SILS. Latest inspections were in 1994. No reportable indications. Diffuser to baffle plate welds examined. No reportable indications.
	04/96	VT-1	Jet pump riser brace to riser weld at JP 5/6 repaired 1994, repair examined 1996 and 1998, no changes noted. Diffuser to baffle plate welds examined. No reportable indications.
	04/96	UT	One jet pump beam replaced 1986 due to indication. Jet pump beams are UT examined each outage using technique capable of detecting cracking at throat and ears. No subsequent indications.
	11/98	VT-1	Inspected all 20 jet pump assemblies. Identified indication at JP7/8 riser brace to riser weld. Repair installed 4/99.
	11/98	EVT-1	Inspected jet pump riser welds RS-1,-2 &-3. Visually identified 3 indications at JP 19/20 RS-1 weld. Subsequently sized indications with UT. The RS-1 weld was evaluated for at least 24 months of operation with full structural margin without repair.
	10/00	EVT-1	Inspected >50% of high priority welds (DF-2, AD-3a,b, AD-1 &AD-2) in accordance with BWRVIP-41. One

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Quad Cities Unit 1**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	11/02	EVT-1	<p>recordable indication at JP-16 backing ring adjacent to AD-3a,b oriented axially across backing ring. Expanded sample to include 100% of AD-3a,b welds. Inspected BWR-3 beams at 16 jet pumps with UT (ends and center) in accordance with BWRVIP-41. No reportable indications. The RS-1 weld at JP 19/20 was permanently repaired.</p> <p>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.</p> <p>One indication was found on JP 2 at AD-3b and two indications were found on JP 7 at AD-3b.</p> <p>Jet pump sensing line clamps were installed on 8 jet pumps (1, 2, 3, 10, 11, 12, 13, 20).</p>
	03/05	EVT-1	<p>Risers: Six RS-1 welds, five RS-2 welds, and all ten RS-3 welds due to limited exams previously. Examined RS-4 and RS-5 on riser 11/12. Re-examined RB-1b on JP3, RB-2b on JP11 and RB-2a on JP 20. All NRI.</p> <p>Mixers: Examined MX-2 in JP 11 and 14. Examined MX-3a&b on 17 & 18. NRI.</p> <p>Diffuser/Adapter: Examined high priority welds, including 11 AD-1, 12 AD-2, 12 AD-3a,b, and 11 DF-2 (reinspection of JP2, JP7, JP16 known flaws). One additional branch noted on JP16 indication compared to previous exam in 2000. No discernable change in previous indications on JP2 and JP7. No other RI.</p>
	05/07	VT-1, VT-3	Reinspected repair on Jet Pump 19/20 RS-1. NRI
	05/07	EVT-1	Re-measured previous indications at AD-3a,b on JP2, JP7 and JP 16. No changes.
	05/07	VT-1, VT-3	Inspected all main wedges with no unusual wear noted. Inspected one aux wedge and set screw. NRI.
CRD Guide Tube (BWRVIP-47)	11/02	VT-1, VT-3 on CRGT-1; EVT-1 on 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.
	03/05	N/A	No inspections performed.
	05/07	N/A	No inspections performed.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Quad Cities Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
CRD Stub Tube (BWRVIP-47)	N/A	N/A	N/A
In-Core Housing (BWRVIP-47)	N/A	N/A	N/A
IRM/SRM Dry Tubes (SIL 409)	03/94	VT	Replaced 2 dry tubes 1994.
	03/96	VT	Replaced 5 dry tubes in 1996.
	10/00	MVT-1	Inspected original dry tubes at 7 locations. No recordable indications.
	11/02	VT-1	Examined 5 dry tubes. Verified plungers engaged at Top Guide. No Reportable Indications.
	04/05		All remaining original dry tubes (5) replaced.
Standby Liquid Control (BWRVIP 27)	04/05	PT	Nozzle To Safe End, N10-F1. NRI
Instrument Penetrations (BWRVIP-49)	N/A	N/A	N/A
Vessel ID Brackets (BWRVIP-48)	03/94	VT-1 and VT-3	Section XI inspections of jet pump riser brace, dryer, feedwater sparger, core spray, and surveillance capsule holder brackets, performed once per interval. VT-3, or VT-1 if in beltline region. No indications noted.
	04/05	VT-1, VT-3	Examined two Moisture Separator shroud guide rod support brackets. Minor gouges and bent top pins. No changes since previous inspection in 11/03 (F51).
		VT-3	Examined two steam dryer guide rod support brackets upper and lower (four inspections). NRI
		EVT-1, VT-3	Examined four steam dryer wall support lugs. NRI
		VT-1, VT-3	Examined six upper and six lower surveillance sample bracket attachments to RPV and sample holders. NRI except for one sample holder that was not engaged in the lower bracket. Bracket was re-engaged during the outage.
		EVT-1, VT-3	Examined eight feedwater sparger end-bracket assemblies. Five of eight had less than three protruding threads. Tightened and applied additional tack welds.
		VT-3	Examined eight feedwater sparger lug to vessel attachment welds. NRI.
	05/07	EVT-1, VT-3	Examined four steam dryer wall support lugs (WSL). Rub marks/gouges from dryer lifting noted on cladding at three of the four WSLs. Re-examined one bent Moisture Separator guide rod support bracket. No change since 2003.
LPCI Coupling	N/A	N/A	Not applicable to this plant.

REACTOR INTERNALS INSPECTION HISTORY

Plant: Quad Cities Unit 1

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Steam Dryer (SIL 644, BWRVIP-139)	03/05	Best effort VT-1, VT-3	The steam dryer was originally scheduled to be replaced during Q1R18, but was not ready in time (the dryer was later replaced in May 2005). The following inspections were then performed during Q1R18: Examined exterior surfaces including outer hoods, historical repair areas, tie bars and attachment welds, four lifting assemblies, four hold down assemblies, two man way covers, cover plates, gussets, upper ring welds, vertical guide welds, outlet plenum lower horizontal welds, outlet plenum vertical welds, and perforated plates. Previous indications were identified that had been repaired, stop drilled or dispositioned to use as is in 2003. Additional indications were noted in the perforated plates. Examined interior surfaces including: drain channel welds, supports, vertical and horizontal plates, support ring, horizontal cross beams, and horizontal cross beam gussets. Previous indications were identified that had been repaired, stop drilled, or dispositioned to use as is in 2003. New indications were observed in dryer bank vertical welds and vertical struts in the ID. Examined interior and exterior skirt. Indications noted. Dryer was repaired and returned to service prior to replacement in May 2005.
	05/06	Best Effort VT-1, VT-3	Performed baseline inspection of new steam dryer installed in June 2005 per BWRVIP-139 and GE recommendations. NRI
	05/07	Best Effort VT-1, VT-3	Performed inspection steam dryer per BWRVIP-139 and GE recommendations. NRI
Feedwater Spargers (NUREG 0619)	1982	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1986	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1989	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1992	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1996	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1998	UT (GERIS)	UT of all four N4 nozzles and inner radii. Acceptable.
	2002	UT (GERIS)	UT of all four N4 nozzles and inner radii. Acceptable.
		EVT-1/VT-3	Examined all 8 Sparger end brackets per NUREG-0619 program and BWRVIP-48. No indications.
04/05	VT-1, VT-3	Visual inspection of sparger flow holes and welds. Slight distortion noted in one flow hole. A small piece of wire found in one flow hole. All FW sparger end bracket stop nuts were run up and tacked welded into place.	
05/07	VT-1, VT-3	Examined all 8 Sparger end brackets. Top of pins are wearing into top side of bracket on 3 end brackets. Performed VT-1 of flow holes. NRI.	

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Quad Cities 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 (BWRVIP-76)	04/95	EVT-1 and UT	Inspections per BWRVIP Guidelines of all shroud repair design-reliant hardware prior to installation of comprehensive repair (4 GE designed tie-rod assemblies). Inspection of shroud consisted of EVT-1 of all ring segment welds (100% of accessible ring surfaces examined), EVT-1 of vertical welds between H1 & H2 OD surface >35% length/weld (ID not accessible), UT of all 6 beltline vertical welds >30% length/weld, and EVT-1 of vertical welds between H6 & H7 OD surface >22% length/weld (ID not accessible). Approximately 51" of 356" examined at the core plate support ring weld (HAZ of H5) had indications (H5 is structurally replaced by comprehensive shroud repair). All other areas examined had No Reportable Indications. Performed EVT-1 on all shroud vertical welds adjacent to beltline (six verticals, 100% of accessible OD surfaces). NO Reportable Indications.
	03/97	EVT-1, VT-3	Performed VT-3 of all four tie-rod assemblies. One reportable indication related to original installation of locking device at upper spring, not service induced. Properly latched locking device.
	01/00	ET/UT	Performed automated volumetric examination (TEIDE 2 tooling) of shroud vertical welds V-14 through V-19 in accordance with BWRVIP-03, BWRVIP-07 and BWRVIP-63. No Reportable Indications.
	02/02	EVT-1	6 vertical welds from the OD per BWRVIP-76. No indications.
	03/04	EVT-1	Examined six welds, including 3 welds inaccessible to UT and three with only single side access. No reportable indications.
	04/06	EVT-1	Ring segment vertical welds. Since the location of the welds was not known, examined 100% of the ring segments. No reportable indications in vertical welds. Indications adjacent to weld H-5 were noted; however, the shroud tie rods structurally replaced this weld.
Shroud Support (BWRVIP-38)	04/95	EVT-1	EVT-1 of H8 and H9 for approx 10" -12" at 4 locations of shroud repair hardware attachment areas. Access hole covers; VT/UT in 1991, circ indications observed and permanent repair installed 1993.
	01/00	EVT-1	Performed visual examination of H8 and H9 in accordance with BWRVIP-38 adjacent to AHC between jet pumps #20 - #1 (e.g. at least 10% of total circumference examined). No Reportable Indications.
	04/06	EVT-1	Examined >10% of H8 and H9 from annulus adjacent to AHC between jet pumps #10 - #11. No Reportable Indications.
Shroud Repair Hardware (BWRVIP Letters 2006-112 and 2006-220)	04/06	EVT-1, VT-3	EVT-1 of all tie rod upper support vertical faces, VT-3 of high-stressed fasteners and other contact points, and overall VT-3 per BWRVIP Letters 2006-112 and 2006-220. Also, VT-3 of core plate wedges adjacent to repair hardware.

REACTOR INTERNALS INSPECTION HISTORY

Plant: **Quad Cities Unit 2**

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
			No reportable indications.
Core Spray Piping (BWRVIP-18)	1980's to 1996	VT-1 (1 mil)	IEB 80-13/NUREG of piping and welds in annulus. No indications observed.
	03/97	UT, EVT-1	UT or EVT-1 performed in accordance with BWRVIP-18. Two indications (1.60" and 2.25" in length) observed at slip joint (P6), evaluated for at least 48 months of hot operation.
	01/00	EVT-1	Performed visual examination of P4d and P8a (4 connections) and P2 at both T-boxes in accordance with BWRVIP-18. No Reportable Indications.
	02/02	UT	BWRVIP-18 UT examinations of all accessible welds (32). No relevant indications.
		EVT-1 on Piping	BWRVIP-18 EVT-1 on 5 welds inaccessible to UT. No indications.
	03/04	EVT-1	Examined 100% of P8a & P4d target welds. No relevant indications.
	04/06	UT	BWRVIP-18 UT examinations of all accessible welds (32). No relevant indications.
		EVT-1	Examined two P4a, one P4b, one P4c, four P4d, two P8a and two P8b welds. No relevant indications.
Core Spray Sparger (BWRVIP-18)	1980's to 1996	VT-1 (1 mil)	IEB 80-13/NUREG of welds on sparger. No indications found
	03/97	CSVT-1, VT-3	CSVT-1, VT-3 performed in accordance with BWRVIP-18, geometry tolerant. No Reportable Indications.
	01/00	N/A	No examinations performed.
	02/02	EVT-1 of S1, S2, & S4; VT-1 of S3: VT-1 of brackets	Examined 50% sparger nozzles, 100% of the S3a, S3b, & S3c nozzle welds, and 100% of S1, S2 and sparger bracket welds. Examined for IEB 80-13 and BWRVIP-18. No indications.
	04/06	EVT-1 of S1, S2, & S4; VT-1 of S3: VT-1 of brackets	Examined 50% sparger nozzles, 100% of the S3a, S3b, & S3c nozzle welds, and 100% of S1, S2 and sparger bracket welds. No Reportable Indications.

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Top Guide (Rim, etc.) (BWRVIP-26)	04/95	VT-1	VT-1 of 5 cells. No indications. VT-1 of alignment assemblies. No indications.
	04/97	VT-1	VT-1 of alignment assemblies and adjacent rim weld. No Reportable Indications.
	01/00	N/A	No examinations performed.
	02/02	EVT-1, VT-1	Inspected 2 alignment assemblies (VT-1) and accessible rim welds (EVT-1) per BWRVIP-26. No indications.
	03/04	EVT-1	Inspected two Guide Aligner Pins and rim welds at adjacent locations. No recordable indications.
Core Plate (Rim, etc.) (BWRVIP-25)	N/A	N/A	Core Plate Wedges installed 4/97.
	04/06	VT-3	Examined core plate wedges as part of shroud repair (tie rod) inspections. No Reportable Indications.
SLC (BWRVIP-27)	01/00	UT	Performed augmented (non PDI) volumetric examination of nozzle to safe-end weld. No Reportable Indications.
	03/04	PT	Performed surface examination of Nozzle To Safe End weld. No Reportable Indications.
Jet Pump Assembly (BWRVIP-41)	03/93	VT-1	JP#7 and JP#18 set screws backed out, repaired and tack welded.
	04/95	VT-1	Hold down beams, beam bolt keepers, lock plates and retainers; restrainer wedges, stops, and adjusting screws, clamp bolts and keepers; riser brace assemblies, adapter and baffle plate welds, sensing lines and sensing line brackets per various SILS. NO Reportable Indications. Inspect 100% every other outage.
	04/97	UT	Performed UT examination of jet pump beams. JP#7 beam rejectable indication at center hole region. Beam replaced.
	01/00	UT/EVT-1	Performed UT examination of jet pump beams using technique capable of detecting cracking at throat and ears. NO Reportable Indications. Performed visual examination of RS-1,-2,-3 riser welds. NO Reportable Indications.
		UT/ET or EVT-1	Performed examinations of at least 50% of the medium and high priority jet pump assembly welds in accordance with BWRVIP-41 using combination of automated (e.g. TEJET tooling) volumetric and visual techniques. JP#15 observed possible wedge (WD-1) movement, expanded inspection to include restrainer components, with no relevant indications. All other components No Reportable Indications.
	02/02	EVT-1, VT-1	Jet pump beams were replaced on 18 jet pumps. EVT-1 and VT-1 of 18 beams; pre- and post replacement (pumps 7 and 18 not replaced because they already had BWR-4 style beams) A gap was identified on jet pump 1, and a setscrew was missing on jet pump 7. Auxiliary wedges were installed at these

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	03/04	EVT-1	locations. Additionally, the set screws on pumps 7 and 18 and the riser braces for jet pumps 17 and 18 were inspected. Jet pump sensing line clamps were installed on 8 jet pumps (1, 2, 3, 10, 11, 12, 13, 20)
		VT-1	Examined 50% of jet pump high priority welds (AD-1, AD-2, DF-2, AD-3a, AD-3b, RS-1, and RS-2, RS-3). Examined a mix of jet pump medium priority welds (MX-1, MX-2, MX-4, RB-1, RB-2, RS-4, RS-5, RS-8, RS-9). No reportable indications.
	04/06	EVT-1, VT-1	Examined all 20 jet pump WD-1 main wedges. Found very minor wedge movement on 2 jet pumps, severe movement on one jet pump, and one actuating rod resting against - and wearing into - the guide sleeve. All evaluated for another cycle.
			EVT-1 of 17 high-priority RS-1, RS-2 and RS-3 welds. VT-1 of all 20 main wedges (WD-1). Found signs of wedge movement on four jet pumps. Replaced the restrainer gate and installed a mitigating slip joint clamp as planned on the pump with the most severe movement. No significant change since 2004 on the other jet pumps. The other jet pumps were evaluated for another cycle.
Jet Pump Diffuser (BWRVIP-41)	04/95	VT-1	Diffuser to baffle plate welds examined. No reportable indications.
	01/00	N/A	See Jet Pump Assembly.
CRD Guide Tube (BWRVIP-47)	04/97	VT-3	Performed visual examination of CRGTs G-7 and H-8 while removed from core. No Reportable Indications.
	02/02	VT-1, VT-3 on CRGT-1; EVT-1 on CRGT-2 & 3	Examined 6 sets of guide tube welds (CRGT- 1, CRGT-2, and CRGT-3) per BWRVIP-47. No Indications.
	03/04	EVT-1, VT-3	Examined 3 sets of guide tube welds (CRGT- 1, CRGT-2, and CRGT-3). No Indications.
	04/06	EVT-1, VT-3	Examined 4 sets of guide tube welds (CRGT- 1, CRGT-2, and CRGT-3) and FS/GT-ARPIN per BWRVIP-47. No Indications.
Fuel Support Alignment Pin welds (BWRVIP-47)	02/02	VT-1, VT-3	Examined 6 pin welds (FS/GT-ARPIN-1) per BWRVIP-47. No Indications
	03/04	VT-3	Examined 3 pin welds (FS/GT-ARPIN-1). No Indications
	04/06	VT-3	Examined 4 pin welds (FS/GT-ARPIN-1). No Indications
CRD Stub Tube	N/A	N/A	N/A
In-Core Housing	N/A	N/A	N/A

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Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
Dry Tube (GE SIL-409 and BWRVIP-47)	04/97	VT	Replaced 6 dry tubes 1997. Dry tubes examined every other outage. Plunger engagement verified each outage.
	01/00	VT	Verified plungers engaged at Top Guide. NO Reportable Indications.
	02/02	MVT-1	Examined 6 dry tubes. Indications observed on 5 dry tubes, and authorized for one additional cycle of operation.
	03/04		None required. All original dry tubes have been replaced.
	04/06		No inspections required.
Feedwater Spargers (BWRVIP-48)	1983	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1986	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1990	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1993	Manual UT	UT of all four N4 nozzles and inner radii. NRI
	1995	UT (GERIS)	UT of all four N4 nozzles and inner radii. NRI
	02/02	VT-1	Examined all Feedwater Spargers. Examined per NUREG-0619 program and BWRVIP-48. No indications.
	2004	UT (GERIS)	UT of all four N4 nozzles and inner radii. Acceptable.
	04/06	VT-1, VT-3	VT-3 overall condition and VT-1 bracket welds of all FW sparger end brackets. Three FW sparger end brackets showed signs of wear where the pins had worn into the brackets. All stop pin nuts were welded to the pins as a pre-planned measure.
Instrument Penetrations (BWRVIP-49)	04/97, 01/00, 02/02, 03/04, 04/06	VT-2	VT-2 system leakage test. Acceptable.
Vessel ID Attachments (BWRVIP-48)	04/95	VT-1, VT-3	Section XI inspections of jet pump riser brace, dryer, feedwater sparger, core spray, and surveillance capsule holder brackets, performed once per interval. VT-3, or VT-1 if in beltline region. No Reportable Indications.
	02/02	VT-1, EVT-1, VT-3	Inspected 8 core spray brackets, 4 feedwater sparger brackets, and 4 steam dryer wall support brackets per BWRVIP-48. No indications.
	03/04	VT-1, EVT-1, VT-3	Examined dryer support lugs and surveillance specimen brackets, with no reportable indications. Examined steam separator and steam dryer guide rod bracket welds. One separator guide rod was bent, but the welds had no reportable indications. Examined feedwater sparger end brackets. One FW sparger end bracket pin was missing a lower nut. A new nut was welded into place.

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Plant: Quad Cities Unit 2

Components in BWRVIP Scope	Date or Frequency of Inspection	Inspection Method Used	Summarize the Following Information: Inspection Results, Repairs, Replacements, Reinspections
	04/06	EVT-1, VT-3	Performed BWRVIP-48 and ASME code inspections of four steam dryer wall support lugs. All four lugs sustained some damage during May 2005 installation of new steam dryer, but all lugs acceptable as-is. No recordable indications in welds.
RPV Internal Surfaces (Cladding) (ASME B.N.1)	02/02	VT-3	VT-3 visual examination for ASME Section XI, B-N-1 of RPV internal surfaces for 360 degrees between steam dam and flange. No indications.
	03/04	VT-3	VT-3 visual examination for ASME Section XI, B-N-1 of RPV internal surfaces for 360 degrees between steam dam and shroud support plate flange. No indications.
LPCI Coupling	N/A	N/A	Not applicable to Quad Cities.
Steam Dryer (GE SIL-644 and BWRVIP-139)	02/02	VT-3	The dryer was modified to accommodate the Extended Power Uprate. The modification installed a mechanical device on the outlet of the dryer chevrons that would more uniformly distribute the velocity through the dryer and increase moisture removal. General Condition Inspection (VT-3) of general top-view post-modification. No indications.
	03/04	Best Effort VT-1, VT-3	Conducted the following inspections per GE SIL-644 S1: Best effort VT-1 inspections of 100% external vertical and horizontal welds, tie bars, and perforated plates; Best effort VT-1 inspections of 100% internal vertical and horizontal hood welds, struts and supports, plates, drain channels; VT-3 inspections of dryer skirt welds (internal and external). Repaired indications in drain channel-to-skirt welds and tie bar welds, and at outer hood gussets and a stiffener plate added after previous dryer failures. Also found indications (acceptable as-is) at the following locations: Internal struts, vane assembly end plate supports, internal hood welds, guide channels, one drain channel, a hold down assembly tack weld, and perforated plate welds.
	04/06	Best Effort VT-1, VT-3	Performed baseline inspection of new steam dryer installed in May 2005 per BWRVIP-139 and GE recommendations. Inspection scope expanded due to indications found in vane bank end plates, gussets, and damage to skirt. The following damage was attributed either directly or indirectly to a lifting event during the original attempt to install the dryer in May 2005: fatigue cracks and distortion in the dryer skirt and base plate support lug cutouts, fatigue crack in a gusset attached to a vane assembly end plate, and a cracked latch box. The following indications were attributed as noted: lifting eyes rotated (design weakness), stress relief cracking in vane assembly plates (original construction issue), and distortion in perforated plates (original construction issue).

Attachment 3

Revision 1

**Use of BWRVIP Guidelines in Lieu of Specific ASME Code Requirements
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(i)**

Clinton Power Station
Dresden Nuclear Power Station, Units 2 and 3
LaSalle County Station, Units 1 and 2
Limerick Generating Station, Units 1 and 2
Oyster Creek Generating Station
Peach Bottom Atomic Power Station, Units 2 and 3
Quad Cities Nuclear Power Station, Units 1 and 2

Attachment 3
Revision 1

**Use of BWRVIP Guidelines in Lieu of Specific ASME Code Requirements
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(i)**

1. ASME Code Component(s) Affected

ASME Section XI, Class 1, Examination Categories B-N-1 (Interior of Reactor Vessel) and B-N-2 (Welded Core Support Structures and Interior Attachments to Reactor Vessels), Code Item Nos. B13.10 - Vessel Interior, B13.20 - Interior Attachments within Beltline Region, B13.30 - Interior Attachments beyond Beltline Region, and B13.40 - Core Support Structure.

2. Applicable Code Edition and Addenda

<u>PLANT</u>	<u>INTERVAL</u>	<u>EDITION</u>	<u>START</u>	<u>END</u>
Clinton Power Station	Second	1989 Edition, no addenda	January 1, 2000	December 31, 2010
Dresden Nuclear Power Station, Units 2 and 3	Fourth	1995 Edition, through 1996 Addenda	January 20, 2003	January 19, 2013
LaSalle County Station, Units 1 and 2	Third	2001 Edition, through 2003 Addenda	October 1, 2007	September 30, 2017
Limerick Generating Station, Units 1 and 2	Third	2001 Edition, through 2003 Addenda	February 1, 2007	January 31, 2017
Oyster Creek Generating Station	Fourth	1995 Edition, through 1996 Addenda	October 15, 2002	October 14, 2012
Peach Bottom Atomic Power Station, Unit 2	Fourth	2001 Edition, through 2003 Addenda (Final edition to be determined)	November 5, 2008	November 4, 2018
Peach Bottom Atomic Power Station, Unit 3	Fourth	2001 Edition, through 2003 Addenda (Final edition to be determined)	August 15, 2008	August 14, 2018
Quad Cities Nuclear Power Station, Units 1 and 2	Fourth	1995 Edition, through 1996 Addenda	March 10, 2003	March 9, 2013

3. Applicable Code Requirements

ASME Section XI requires the examination of components within the Reactor Pressure Vessel. These examinations are included in Table IWB-2500-1 Categories B-N-1 and B-N-2 and identified with the following item numbers:

B 13.10 Examine accessible areas of the reactor vessel interior each period by the VT-3 method (B-N-1).

B 13.20 Examine interior attachment welds within the beltline region each interval by the VT-1 method (B-N-2).

- B 13.30 Examine interior attachment welds beyond the beltline region each interval by the VT-3 method (B-N-2).
- B 13.40 Examine surfaces of the welded core support structure each interval by the VT-3 method.

These examinations are performed to assess the structural integrity of components within the boiling water reactor pressure vessel.

4. Reason for Request

In accordance 10 CFR 50.55a(a)(3)(i), Exelon Generation Company, LLC (Exelon) and AmerGen Energy Company, LLC (AmerGen) are requesting a proposed alternative to the Code requirements provided above on the basis that the use of the BWRVIP guidelines discussed below will provide an acceptable level of quality and safety.

The BWRVIP Inspection and Evaluation (I&E) guidelines have recommended aggressive specific inspection by BWR operators to completely identify material condition issues with BWR components. A wealth of inspection data has been gathered during these inspections across the BWR industry. I&E guidelines focus on specific and susceptible components, specify appropriate inspection methods capable of identifying real anticipated degradation mechanisms, and require re-examination at conservative intervals. In contrast, the code inspection requirements were prepared before the BWRVIP initiative and have not evolved with BWR inspection experience.

Use of this proposed alternative will maintain an adequate level of quality and safety and avoid unnecessary inspections, while conserving radiological dose.

5. Proposed Alternative

In lieu of the requirements of ASME Section XI, the proposed alternative is detailed in attached Table 1 for Examination Category B-N-1 and B-N-2.

Exelon and AmerGen will satisfy the Examination Category B-N-1 and B-N-2 requirements as described in Table 1 in accordance with BWRVIP guideline requirements. This relief request proposes to utilize the identified BWRVIP guidelines in lieu of the associated Code requirements, including examination method, examination volume, frequency, training, successive and additional examinations, flaw evaluations, and reporting.

Not all the components addressed by these guidelines are code components. The following guidelines are applicable to this Relief Request:

- BWRVIP-03, "BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines"
- BWRVIP-18-A, "BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines"
- BWRVIP-26-A, "BWR Top Guide Inspection and Flaw Evaluation Guidelines"
- BWRVIP-38, "BWR Shroud Support Inspection and Flaw Evaluation Guidelines"
- BWRVIP-41, Revision 1 "BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines"
- BWRVIP-42-A, "LPCI Coupling Inspection and Flaw Evaluation Guidelines"
- BWRVIP-47-A, "BWR Lower Plenum Inspection and Flaw Evaluation Guidelines"

BWRVIP-48-A, "Vessel ID Attachment Weld Inspection and Flaw Evaluation Guidelines"
BWRVIP-76, "BWR Core Shroud Inspection and Flaw Evaluation Guidelines" (replaced
BWRVIP-01, -07, and -63)

BWRVIP-25, "BWR Core Plate Inspection and Flaw Evaluation Guidelines."

BWRVIP-27-A, "BWR Standby Liquid Control System/Core Plate ΔP Inspection and Flaw
Evaluation Guidelines."

BWRVIP-138, "Updated Jet Pump Beam Inspection and Flaw Evaluation."

The attached Table (Table 1) compares present ASME Examination Category B-N-1 and B-N-2 requirements with the above current BWRVIP guideline requirements, as applicable, to BWR/2 through BWR/6 units.

In addition, where guidance in existing BWRVIP documents has been supplemented or revised by subsequent correspondence approved by the BWRVIP executive committee, the most current BWRVIP approved guidance will be implemented. Therefore, the attached Table only represents a current comparison.

Any deviations from the referenced BWRVIP Guidelines for the duration of the proposed alternative will be appropriately documented and communicated to the NRC, per the BWRVIP Deviation Disposition Process. Current Exelon/AmerGen deviations from the subject guidelines above are summarized in Table 2.

Inspection services, by an Authorized Inspection Agency, will be applied to the proposed alternative actions of this relief request.

6. Basis for Use

BWRs now examine reactor internals in accordance with BWRVIP guidelines. These guidelines have been written to address the safety significant vessel internal components and to examine and evaluate the examination results for these components using appropriate methods and reexamination frequencies. The BWRVIP has established a reporting protocol for examination results and deviations. The NRC has agreed with the BWRVIP approach in principal and has issued Safety Evaluations for these guidelines (see References 2 – 12 below). Therefore, use of these guidelines, as an alternative to the subject Code requirements, provides an acceptable level of quality and safety and will not adversely impact the health and safety of the public.

As additional justification, Attachment 4 ("Comparison of Code Examination Requirements to BWRVIP Examination Requirements") provides specific examples which compare the inspection requirements of ASME Code Item Numbers B13.10, B13.20, B13.30, and B13.40 in Table IWB-2500-1, to the inspection requirements in the BWRVIP documents. Specific BWRVIP documents are provided as examples. This comparison also includes a discussion of the inspection methods. These comparisons demonstrate that use of these guidelines, as an alternative to the subject Code requirements, provides an acceptable level of quality and safety and will not adversely impact the health and safety of the public.

7. Duration of Proposed Alternative

The duration of the alternative is for the remainder of the interval specified above for each affected unit.

8. Precedence

A similar relief request was approved for Vermont Yankee Nuclear Power Station as discussed in Reference 1.

9. References

1. Letter from U. S. Nuclear Regulatory Commission (USNRC) to Entergy Nuclear Operations, "Safety Evaluation of Relief Request RI-01, Vermont Yankee Nuclear Power Station (TAC NO. MC0690)", dated September 19, 2005
2. Letter USNRC to BWRVIP, dated April 27, 1998, "Final Supplement to the Safety Evaluation of the Boiling Water Reactor Vessel Internals Project, BWRVIP-07 Report (TAC NO. M94959)"
3. Letter USNRC to BWRVIP, dated October 6, 1999, "Staff Reevaluation of Table 1 in the BWRVIP-07 Report (TAC NO. M94959)"
4. Letter USNRC to BWRVIP, dated September 6, 2005, "NRC Approval Letter of BWRVIP-18-A, "BWR Vessel and Internals Project Boiling Water Reactor Core Spray Internals Inspection and Flaw Evaluation Guideline" "
5. Letter USNRC to BWRVIP, dated September 9, 2005, "NRC Approval Letter of BWRVIP-26-A, "BWR Vessel and Internals Project Boiling Water Reactor Top Guide Inspection and Flaw Evaluation Guidelines" "
6. Letter USNRC to BWRVIP, dated July 24, 2000, "Final Safety Evaluation of the "BWR Vessel and Internals Project, BWR Shroud Support Inspection and Flaw Evaluation Guidelines (BWRVIP-38)," EPRI Report TR-108823 (TAC NO. M99638)"
7. Letter USNRC to BWRVIP, dated February 4, 2001, "Final Safety Evaluation of the "BWR Vessel and Internals Project, BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines (BWRVIP-41)," (TAC NO. M99870)"
8. Letter USNRC to BWRVIP, dated September 9, 2005, NRC approval letter of BWRVIP-42-A, "BWR Vessel and Internals Project Boiling Water Reactor Low Pressure Coolant Injection and Flaw Evaluation Guidelines"
9. Letter USNRC to BWRVIP, dated September 9, 2005, "NRC Approval Letter of BWRVIP-47-A, "BWR Vessel and Internals Project Boiling Water Reactor Lower Plenum Inspection and Flaw Evaluation Guidelines" "
10. Letter USNRC to BWRVIP, dated July 25, 2005, "NRC Approval Letter of BWRVIP-48-A, "BWR Vessel and Internals Project Vessel ID Attachment Weld Inspection and Flaw Evaluation Guideline" "
11. Letter USNRC to BWRVIP, dated August 20, 2001, "Final Safety Evaluation of the "BWR Vessel and Internals Project, Shroud Vertical Weld Inspection and Evaluation Guidelines (BWRVIP-63)," (TAC NO. MA6015)"

12. Letter USNRC to BWRVIP, dated June 10, 2004, Proprietary Version of NRC Staff Review of BWRVIP-27-A, "BWR Standby Liquid Control System/Core Plate ΔP Inspection and Flaw Evaluation Guidelines"

TABLE 1

Comparison of ASME Examination Category B-N-1 and B-N-2 Requirements With BWRVIP Guidance Requirements ⁽¹⁾

ASME Item No. Table IWB-2500-1	Component	ASME Exam Scope	ASME Exam	ASME Frequency	Applicable BWRVIP Document	BWRVIP Exam Scope	BWRVIP Exam	BWRVIP Frequency
B13.10	Reactor Vessel Interior	Accessible Areas (Non-specific)	VT-3	Each period	BWRVIP-18, 26, 38, 41, 42, 47, 48, 76	Overview examinations of components during BWRVIP examinations satisfy Code VT-3 inspection requirements.		
B13.20	Interior Attachments Within Beltline - Riser Braces	Accessible Welds	VT-1	Each 10-year Interval	BWRVIP-48 Table 3-2	Riser Brace Attachment	EVT-1	100% in first 12 years, 25% during each subsequent 6 years
	Lower Surveillance Specimen Holder Brackets				BWRVIP-48, Table 3-2	Bracket Attachment	VT-1	Each 10-year Interval
B13.30	Interior Attachments Beyond Beltline - Steam Dryer Hold-down Brackets	Accessible Welds	VT-3	Each 10-year Interval	BWRVIP-48 Table 3-2	Bracket Attachment	VT-3	Each 10-year Interval
	Guide Rod Brackets				BWRVIP-48, Table 3-2	Bracket Attachment	VT-3	Each 10-year Interval
	Steam Dryer Support Brackets				BWRVIP-48, Table 3-2	Bracket Attachment	EVT-1	Each 10-year Interval
	Feedwater Sparger Brackets				BWRVIP-48, Table 3-2	Bracket Attachment	EVT-1	Each 10-year Interval
	Core Spray Piping Brackets				BWRVIP-48, Table 3-2	Bracket Attachment	EVT-1	Every 4 Refueling Cycles
	Upper Surveillance Specimen Holder Brackets				BWRVIP-48, Table 3-2	Bracket Attachment	VT-3	Each 10-year Interval
	Shroud Support (Weld H9) including gussets where applicable				BWRVIP-38, 3.1.3.2, Figures 3-2 and 3-5	Weld H9 ⁽²⁾ including gussets (where applicable)	EVT-1 or UT	Maximum of 6 years for EVT-1, Maximum of 10 years for UT
	Shroud Support Legs (H12) Welds	(Rarely Accessible)	BWRVIP-38, 3.2.3	Weld H12	Per BWRVIP-38 NRC SER (7/24/00), inspect with appropriate method ⁽⁴⁾	When accessible		

ASME Item No. Table IWB-2500-1	Component	ASME Exam Scope	ASME Exam	ASME Frequency	Applicable BWRVIP Document	BWRVIP Exam Scope	BWRVIP Exam	BWRVIP Frequency
B13.40	Integrally Welded Core Support Structure	Accessible Surfaces	VT-3	Each 10-year Interval	BWRVIP-38, 3.1.3.2, Figures 3-2, 3-5	Shroud Support and Leg Welds including gussets as applicable	EVT-1 or UT	Based on as-found conditions, to a maximum 6 years for one side EVT-1, 10 years for UT where accessible
	Shroud Horizontal welds				BWRVIP-76, 2.2.1	Welds H1- H7 as applicable	EVT-1 or UT	Based on as-found conditions, to a maximum 6 years for one side EVT-1, 10 years for UT where accessible
	Shroud Vertical welds				BWRVIP-76, 2.3, Figure 3-3	Vertical and Ring Segment Welds as applicable	EVT-1 or UT	Maximum 6 years for one-sided EVT-1, 10 years for UT
	Shroud Repairs ⁽³⁾				BWRVIP-76, Section 3.5	Tie-Rod Repair	VT-3	Per repair designer recommendations per BWRVIP-76.

NOTES:

- 1) This Table provides only an overview of the requirements. For more details, refer to ASME Section XI, Table IWB-2500-1, and the appropriate BWRVIP document.
- 2) In accordance with Appendix A of BWRVIP-38, a site specific evaluation will determine the minimum required weld length to be examined.
- 3) Shroud repairs are currently installed on both units at Dresden and Quad Cities, and on the single units at Oyster Creek and Clinton.
- 4) When inspection tooling and methodologies are available, they will be utilized to establish a baseline inspection of these welds.

TABLE 2
BWRVIP Deviations

<u>PLANT</u>	<u>BWRVIP DOCUMENT</u>	<u>LETTER DATE TO USNRC</u>	<u>DEVIATION</u>	<u>APPLICABILITY</u>
LaSalle County Station, Unit 1	BWRVIP-76	Letter from S. R. Landahl (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, dated April 27, 2006	100% of the accessible areas of the LaSalle County Station Unit 1 core shroud was not examined in the L1R11 outage in February 2006. However, sufficient coverage of the accessible areas were examined, an engineering evaluation was performed and the results indicate the Unit 1 shroud retained sufficient structural margin and should be re-examined in six years.	This deviation does not impact the basis for use of this relief request.
Oyster Creek Generating Station	BWRVIP-76	Letter from T. S. Rausch (AmerGen Energy Company) to U. S. Nuclear Regulatory Commission, dated April 27, 2007	Per BWRVIP-76 re-inspection guidelines, a one-sided visual examination technique requires reexamination in 6 years as compared to a two-sided visual or volumetric technique, which can achieve a 10-year reexamination frequency. Contrary to this requirement, the four vertical welds were not reexamined in 1R21 (2006) as required by the BWRVIP-76 guidance for single-sided examination.	This deviation does not impact the basis for use of this relief request.

Attachment 4
Revision 1

Comparison of Code Examination Requirements to BWRVIP Examination Requirements

Clinton Power Station
Dresden Nuclear Power Station, Units 2 and 3
LaSalle County Station, Units 1 and 2
Limerick Generating Station, Units 1 and 2
Oyster Creek Generating Station
Peach Bottom Atomic Power Station, Units 2 and 3
Quad Cities Nuclear Power Station, Units 1 and 2

ATTACHMENT 4
Revision 1
COMPARISON OF CODE EXAMINATION REQUIREMENTS TO
BWRVIP EXAMINATION REQUIREMENTS

The following discussion provides a comparison of the examination requirements provided in ASME Code Item Numbers B13.10, B13.20, B13.30, and B13.40 in Table IWB-2500-1, to the examination requirements in the BWRVIP guidelines. Specific BWRVIP guidelines are provided as examples for comparisons. This comparison also includes a discussion of the examination methods.

1. Code Requirement - B13.10 - Reactor Vessel Interior Accessible Areas (B-N-1)

The ASME Section XI Code requires a VT-3 examination of reactor vessel accessible areas, which are defined as the spaces above and below the core made accessible during normal refueling outages. The frequency of these examinations is specified as the first refueling outage, and at intervals of approximately 3 years, during the first inspection interval, and each period during each successive 10-year Inspection Interval. Typically, these examinations are performed every other refueling outage of the Inspection Interval. This examination requirement is a non-specific requirement that is a departure from the traditional Section XI examinations of welds and surfaces. As such, this requirement has been interpreted and satisfied differently across the domestic fleet. The purpose of the examination is to identify relevant conditions such as distortion or displacement of parts; loose, missing, or fractured fasteners; foreign material, corrosion, erosion, or accumulation of corrosion products; wear; and structural degradation.

Portions of the various examinations required by the applicable BWRVIP Guidelines require access to accessible areas of the reactor vessel during each refueling outage. Examination of core spray piping and spargers (BWRVIP-18-A), top guide (BWRVIP-26-A), jet pump welds and components (BWRVIP-41, Rev. 1), interior attachments (BWRVIP-48-A), core shroud welds (BWRVIP-76), shroud support (BWRVIP-38), LPCI couplings (BWRVIP-42-A), and lower plenum components (BWRVIP-47-A) provides such access. Locating and examining specific welds and components within the reactor vessel areas above, below (if accessible), and surrounding the core (annulus area) entails access by remote camera systems that essentially perform equivalent VT-3 examination of these areas or spaces as the specific weld or component examinations are performed. This provides an equivalent method of visual examination on a more frequent basis than that required by the ASME Section XI Code. Evidence of wear, structural degradation, loose, missing, or displaced parts, foreign materials, and corrosion product buildup can be, and has been observed during the course of implementing these BWRVIP examination requirements. Therefore, the specified BWRVIP Guideline requirements meet or exceed the subject Code requirements for examination method and frequency of the interior of the reactor vessel. Accordingly, these BWRVIP examination requirements provide an acceptable level of quality and safety as compared to the subject Code requirements.

2. Code Requirement - B13.20 - Interior Attachments Within the Beltline (B-N-2)

The ASME Section XI Code requires a VT-1 examination of accessible reactor interior surface attachment welds within the beltline each 10-year interval. In the boiling water reactor, this includes the jet pump riser brace welds-to-vessel wall and the lower

surveillance specimen support bracket welds-to-vessel wall. In comparison, the BWRVIP requires the same examination method and frequency for the lower surveillance specimen support bracket welds, and requires an EVT-1 examination on the remaining attachment welds in the beltline region in the first 12 years, and then 25% during each subsequent 6 years.

The jet pump riser brace examination requirements are provided below to show a comparison between the Code and the BWRVIP examination requirements.

Comparison to BWRVIP Requirements - Jet Pump Riser Braces (BWRVIP-41, Rev. 1 and BWRVIP-48-A)

- The ASME Code requires a 100% VT-1 examination of the jet pump riser brace-to-reactor vessel wall pad welds each 10-year interval.
- The BWRVIP requires an EVT-1 examination of the jet pump riser brace-to-reactor vessel wall pad welds the first 12 years and then 25% during each subsequent 6 years.
- BWRVIP-48-A specifically defines the susceptible regions of the attachment that are to be examined.

The Code VT-1 examination is conducted to detect discontinuities and imperfections on the surfaces of components, including such conditions as cracks, wear, corrosion, or erosion. The BWRVIP enhanced VT-1 (EVT-1) is conducted to detect discontinuities and imperfections on the surface of components and is additionally specified to detect potentially very tight cracks characteristic of fatigue and inter-granular stress corrosion cracking (IGSCC), the relevant degradation mechanisms for these components. General wear, corrosion, or erosion although generally not a concern for inherently tough, corrosion resistant stainless steel material, would also be detected during the process of performing a BWRVIP EVT-1 examination.

The Code VT-1 visual examination method requires (depending on applicable Edition) that at a maximum distance of 2 feet, a 1/32" black line can be resolved or a letter character with a height of 0.044 inches can be read. The BWRVIP EVT-1 visual examination method requires resolution of a 1/2 mil (0.0005 inch) wire on the examination surface. The jet pump riser brace configuration for each plant varies with vessel manufacturer (B&W, CB&I, etc.) and generation (BWR/3-BWR/6). BWRVIP-48-A includes diagrams for each configuration and prescribes examination for each configuration.

The calibration standards used for BWRVIP EVT-1 exams utilize the Code characters and the 0.0005" wire, thus assuring at least equivalent resolution compared to the Code. Although the BWRVIP examination may be less frequent, it is a more comprehensive method. Therefore, the enhanced flaw detection capability of an EVT-1, with a less frequent examination schedule provides an acceptable level of quality and safety to that provided by the ASME Code.

3. Code Requirement - B13.30 - Interior Attachment Beyond the Beltline Region (B-N-2)

The ASME Section XI Code requires a VT-3 examination of accessible reactor interior surface attachment welds beyond the beltline each 10-year interval. In the boiling water

reactor, this includes the core spray piping primary and supplemental support bracket welds-to-vessel wall, the upper surveillance specimen support bracket welds-to-vessel wall, the feedwater sparger support bracket welds-to-reactor vessel wall, the steam dryer support and hold down bracket welds-to-reactor vessel wall, the guide rod support bracket weld-to-reactor vessel wall, the shroud support plate-to-vessel wall, and shroud support gussets. BWRVIP-48-A requires as a minimum the same VT-3 examination method as the Code for some of the interior attachment welds beyond the beltline region, and in some cases specifies an enhanced visual examination technique EVT-1 for these welds. For those interior attachment welds that have the same VT-3 method of examination, the same scope of examination (accessible welds), the same examination frequency (each 10 year interval) and ASME Section XI flaw evaluation criteria, the level of quality and safety provided by the BWRVIP requirements are equivalent to that provide by the ASME Code.

For the core spray primary and secondary support bracket attachment welds, the steam dryer support bracket attachment welds, the feedwater sparger support bracket attachment welds, and the shroud support plate-to-vessel welds, as applicable, the BWRVIP Guidelines require an EVT-1 examination at the same frequency as the Code, or at a more frequent rate. Therefore, the BWRVIP requirements provide the same level of quality and safety to that provided by the ASME Code.

The core spray piping bracket-to-vessel attachment weld is used as an example for comparison between the Code and BWRVIP examination requirements as discussed below.

Comparison to BWRVIP Requirements – Core Spray piping Bracket Welds (BWRVIP-48-A)

- The Code examination requirement is a VT-3 examination of each weld every 10 years.
- The BWRVIP examination requirement is an EVT-1 for the core spray piping bracket attachment welds with each weld examined every four cycles (8 years for units with a two year fuel cycle).

The BWRVIP examination method EVT-1 has superior flaw detection and sizing capability, the examination frequency is greater than the Code requirements, and the same flaw evaluation criteria are used.

The Code VT-3 examination is conducted to detect component structural integrity by ensuring the components general condition is acceptable. An enhanced EVT-1 is conducted to detect discontinuities and imperfections on the examination surfaces, including such conditions as tight cracks caused by IGSCC or fatigue, the relevant degradation mechanisms for BWR internal attachments.

Therefore, with the EVT-1 examination method, the same examination scope (accessible welds), an increased examination frequency (8 years instead of 10 years) in some cases, the same flaw evaluation criteria (Section XI), the level of quality and safety provided by the BWRVIP criteria is superior than that provided by the Code.

4. Code Requirement - B13.40 - Integrally Welded Core Support Structures (B-N-2)

The ASME Code requires a VT-3 examination of accessible surfaces of the welded core support structure each 10-year interval. In the boiling water reactor, the welded core support structure has primarily been considered the shroud support structure, including the

shroud support plate (annulus floor) the shroud support ring, the shroud support welds, the shroud support gussets, and the shroud support legs (if accessible). In later designs, the shroud itself is considered part of the welded core support structure. Historically, this requirement has been interpreted and satisfied differently across the industry. The proposed alternate examination replaces this ASME requirement with specific BWRVIP guidelines that examine susceptible locations for known relevant degradation mechanisms.

- The Code requires a VT-3 of accessible surfaces each 10-year interval.
- The BWRVIP requires as a minimum the same examination method (VT-3) as the Code for integrally welded Core Support Structures, and for specific areas, requires either an enhanced visual examination technique (EVT-1) or volumetric examination (UT).

BWRVIP recommended examinations of integrally welded core support structures are focused on the known susceptible areas of this structure, including the welds and associated weld heat affected zones. As a minimum, the same or superior visual examination technique is required for examination at the same frequency as the code examination requirements. In many locations, the BWRVIP guidelines require a volumetric examination of the susceptible welds at a frequency identical to the Code requirement.

Where shroud repair tie-rods have been installed (Dresden, Quad Cities, Oyster Creek and Clinton), the BWRVIP referenced examinations are the same as the Code requirements. Shroud repair tie-rod examinations are recommended in BWRVIP-76 and have the same basic VT-3 method of examination, the same scope of examination (accessible surfaces), the same examination frequency (each 10 year interval) and the same flaw evaluation criteria. Therefore, the BWRVIP requirements provide a level of quality and safety equivalent to that provided by the ASME Code. Additionally, the repair vendor has provided site-specific examination recommendations to address the unique features of each repair.

For other integrally welded core support structure components, the BWRVIP requires an EVT-1 or UT of core support structures. The core shroud is used as an example for comparison between the Code and BWRVIP examination requirements as shown below.

Comparison to BWRVIP Requirements - BWR Core Shroud Examination and Flaw Evaluation Guideline (BWRVIP-76)

- The Code requires a VT-3 examination of accessible surfaces every 10 years.
- The BWRVIP requires an EVT-1 examination from the inside and outside surface where accessible or ultrasonic examination of each core shroud circumferential weld that has not been structurally replaced with a shroud repair at a calculated "end of interval" (EOI) that will vary depending upon the amount of flaws present, but not to exceed ten years.

The BWRVIP recommended examinations specify locations that are known to be vulnerable to BWR relevant degradation mechanisms rather than "all surfaces". The BWRVIP examination methods (EVT-1 or UT) are superior to the Code required VT-3 for flaw detection and characterization. The BWRVIP examination frequency is equivalent to or more frequent than the examination frequency required by the Code. The superior flaw detection and characterization capability, with an equivalent or more frequent examination frequency

and the comparable flaw evaluation criteria, results in the BWRVIP criteria providing a level of quality and safety equivalent to or superior to that provided by the Code requirements.