

RS-14-038

10 CFR 50.55a

January 23, 2014

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

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:** Relief Request I4R-20, Inservice Inspection Program Relief Request Regarding Examination Coverage for the Fourth Inservice Inspection Interval

In accordance with 10 CFR 50.55a, "Codes and standards," paragraph (g)(5)(iii), Exelon Generation Company, LLC (EGC), requests NRC approval of the attached relief request associated with the fourth inservice inspection (ISI) interval for Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. Relief is requested due to the impracticality of satisfying the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," due to plant design. The fourth ISI interval for QCNPS ended April 8, 2013.

The relief request is based on the limitations that precluded completion of full Code examination requirements of ASME Class 1 components during the fourth interval. Code examination of the components was limited due to the materials of construction and design configurations. The QCNPS fourth ten-year ISI program plan was developed in accordance with ASME Code, Section XI, 1995 Edition through 1996 Addenda.

EGC requests approval of the proposed relief request by January 23, 2015. There are no regulatory commitments contained in this letter. Should you have any questions concerning this letter, please contact Mr. Kenneth M. Nicely at (630) 657-2803.

Respectfully,



Patrick R. Simpson  
Manager – Licensing

Attachment: 10 CFR 50.55a Relief Request I4R-20

cc: NRC Regional Administrator, Region III  
NRC Senior Resident Inspector, Quad Cities Nuclear Power Station

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#### Request for Relief for Inservice Inspection Impracticality Due to the Limited Examination Coverage In Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

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**1. ASME Code Component(s) Affected:**

Code Class: 1  
Reference: IWB-2500, Table IWB-2500-1,  
IWF-2500, Table IWF-2500-1,  
ASME Code Case N-460  
ASME Code Case N-578-1, Table 1  
Examination Category: B-A, B-D, F-A, R-A  
Item Number: B1.12, B1.40, B1.51, B3.90, F1.40, R1.20  
Description: Limited examination coverage  
Component Number: See Tables I4R-20.1 and I4R-20.2 below for specific  
component identification

**2. Applicable Code Edition and Addenda:**

The Inservice Inspection (ISI) Program for the Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2, fourth ISI interval was based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 1995 Edition through 1996 Addenda.

**3. Applicable Code Requirement:**

Table IWB-2500-1 and Table 1 of Code Case N-578-1 Examination Categories/Item Numbers B-A, B1.12, B1.40, B1.51; B-D, B3.90; and R-A, R1.20 require a volumetric and/or surface examination, which includes essentially 100% of the weld. QCNPS Units 1 and 2 adopted ASME Code Case N-460, "Alternative Examination Coverage for Class 1 and Class 2 Welds, Section XI, Division 1," which defines "essentially 100%" as greater than 90% coverage of the examination volume or surface area, as applicable.

Table IWF-2500-1, Examination Category F-A, Item Number F1.40 requires a VT-3 visual examination of these supports. Footnote 3 of Table IWF-2500-1 indicates that at least one component be examined for multiples of similar components, within a system of similar design, function, and service. There is no equivalent component to the reactor vessel skirt; therefore, this component is required to be examined. The VT-3 visual examination is in accordance with the boundaries shown in Figure IWF-1300-1.

**4. Impracticality of Compliance:**

Relief is requested in accordance with 10 CFR 50.55a(g)(5)(iii), on the basis that conformance with these Code requirements is impractical. Conformance would require extensive structural modifications to the component or surrounding structure.

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QCNPS, Units 1 and 2, obtained Construction Permits CPPR-23 and CPPR-24, respectively, on February 15, 1967. The piping systems and associated components were designed and fabricated before the examination requirements of ASME Section XI were formalized and published. Since QCNPS, Units 1 and 2, were not specifically designed to meet the requirements of ASME Section XI, full compliance is not feasible or practical within the limits of the current plant design.

Physical obstructions imposed by design, geometry, and materials of construction are typical of vessel appurtenances and sacrificial shield, insulation support rings, structural and component support members, adjacent component weldments in close proximity, unique component configurations and dissimilar metal weldments.

Tables I4R-20.1 and I4R-20.2 below indicate the refueling outage in which these components were examined, and the coverage percentages obtained for those components that have been examined. These tables are cumulative lists of multiple components with limited examination coverage during the fourth ISI interval.

Based on the above considerations, Exelon Generation Company, LLC (EGC) requests relief from the requirement to achieve greater than 90% volume and/or area coverage for the components listed in Tables I4R-20.1 and I4R-20.2 below, where greater than 90% coverage is impractical.

#### 5. **Burden Caused by Compliance:**

Compliance with the examination requirements of ASME Section XI would require modification of plant components to remove obstructions, redesigning of plant systems, and replacement of components where geometry is inherent to component design.

#### 6. **Proposed Alternative and Basis for Use:**

##### Proposed Alternative

In accordance with 10 CFR 50.55a(g)(5)(iii), EGC requests relief from ASME Section XI Code requirements on the basis that the required "essentially 100%" coverage examination is impractical due to physical obstructions and limitations imposed by design, geometry, and materials of construction for the components listed in Tables I4R-20.1 and I4R-20.2 below. Because of the inherent interferences associated with the components listed in Tables I4R-20.1 and I4R-20.2, and the permanent insulation surrounding the reactor vessel skirt, there are no qualified alternative examination techniques currently available to increase coverage.

EGC will continue to perform best effort examinations in order to achieve the maximum amount of coverage possible. Additionally, a VT-2 examination is performed on the subject pressure-retaining components during system pressure tests per examination category B-P each refueling outage.

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#### Basis for Use

Examination techniques have been progressively upgraded during this interval to augment the required Section XI examinations. EGC continues to partner with the Electric Power Research Institute (EPRI), the Performance Demonstration Initiative (PDI), Inservice Inspection vendors and other industry sources to encourage the development and provide an awareness of improved examination techniques. The goal of these initiatives is to enhance coverage and flaw detection commensurate with radiation dose reduction.

EGC examination procedures are revised on a continuing basis to incorporate proven techniques for a higher level of safety and quality as they become available. The examinations and techniques used today exceed the examinations conducted in the past on each component.

All components received as a minimum, the required examination(s) to the extent practical due to the limited or lack of access available. The examinations conducted confirmed satisfactory results evidencing no unacceptable flaws present, even though "essentially 100%" coverage was not attained. EGC has concluded that if any active degradation mechanisms were to exist in the subject welds, those degradations would have been identified in the examinations performed.

Based on the above, with the vintage of the QCNPS, Units 1 and 2, designs, the underlying objectives of the code required volumetric and surface examinations have been met. The examinations were completed to the extent practical and evidenced no unacceptable flaws present. Additionally, a VT-2 examination is performed on the subject components during system pressure tests per examination category B-P each refueling outage and provides additional assurance that the structural integrity of the subject components is maintained.

#### **7. Duration of Proposed Alternative:**

Relief is requested for the fourth ten-year ISI interval of the Inservice Inspection Program for QCNPS, Units 1 and 2.

#### **8. Precedents:**

Relief was granted for the QCNPS, Units 1 and 2, third ISI intervals in NRC safety evaluations dated September 6, 2000, June 28, 2002, and May 10, 2005.

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**Table I4R-20.1:** QCNPS Unit 1 – List of Components with Limited Examination Coverage

<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
1/REACTOR VESSEL/RPV- VSC1- 197/WELD	RPV COURSE #1 197 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q1R18	36.0%	UT-SLIC 40/0°/55°	The completed examination was limited to 36.0% coverage due to the proximity of the core shroud repair tie rod and the sensing line clamps.
1/REACTOR VESSEL/RPV- VSC1- 317/WELD	RPV COURSE #1 317 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q1R18	85.0%	UT-SLIC 40/0°/55°	The completed examination was limited to 85.0% coverage due to the proximity of the baffle plate.
1/REACTOR VESSEL/RPV- VSC1-55/WELD	RPV COURSE #1 55 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q1R18	78.0%	UT-SLIC 40/0°/55°	The completed examination was limited to 78.0% coverage due to the proximity of the baffle plate and the diffuser.
1/REACTOR VESSEL/RPV- VSC1-77/WELD	RPV COURSE #1 77 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q1R18	85.0%	UT-SLIC 40/0°/55°	The completed examination was limited to 85.0% coverage due to the proximity of the baffle plate.
1/REACTOR VESSEL/RPV- VSC2-22/WELD	RPV COURSE #2 22 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q1R18	66.0%	UT-SLIC 40/0°/55°	The completed examination was limited to 66.0% coverage due to proximity of the core shroud repair tie rod.
1/REACTOR VESSEL/RPV- VSC3- 197/WELD	RPV COURSE #3 197 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q1R18	72.0%	UT-SLIC 40/0°/55°	The completed examination was limited to 72.0% coverage due to the proximity of the core spray and feedwater spargers and the core shroud tie rod repair brackets.
1/REACTOR VESSEL/RPV- VSC3- 317/WELD	RPV COURSE #3 317 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q1R18	80.0%	UT-SLIC 40/0°/55°	The completed examination was limited to 80.0% coverage due to the proximity of the core spray and feedwater spargers.

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<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
1/REACTOR VESSEL/RPV-VSC3-77/WELD	RPV COURSE #3 77 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q1R18	80.0%	UT-SLIC 40/0°/55°	The completed examination was limited to 80.0% coverage due to the proximity of the core spray and feedwater spargers.
1/REACTOR HEAD/RPV-THHF/WELD	RPV TOP HEAD TO FLANGE WELD	IWB-2500-5 Volumetric and Surface	B1.40	Q1R19	72.6%	UT-60° RL, 60° L; MT	The completed examination was limited to 72.6% coverage due to flange configuration.
1/REACTOR VESSEL/BMR-016-295/WELD	RPV WELD BELTLINE REPAIR AREA	IWB-2500-1 IWB-2500-2 Volumetric	B1.51	Q1R18	83.0%	UT-SLIC 40/0°/55°	The completed examination was limited to 83.0% coverage due to proximity of the jet pump riser brackets and the core shroud repair tie rod.
1/REACTOR VESSEL/BMR-167-305/WELD	RPV WELD BELTLINE REPAIR AREA	IWB-2500-1 IWB-2500-2 Volumetric	B1.51	Q1R18	87.0%	UT-SLIC 40/55°	The completed examination was limited to 87.0% coverage due to proximity of the jet pump riser bracket.
1/REACTOR HEAD/N6A NOZ/WELD	HEAD-NOZZLE (HEAD SPRAY)	IWB-2500-7 Volumetric	B3.90	Q1R19	56.5%	UT-60° L	The completed examination was limited to 56.5% coverage due to nozzle configuration
1/REACTOR HEAD/N6B NOZ/WELD	HEAD-NOZZLE (SPARE NOZZLE)	IWB-2500-7 Volumetric	B3.90	Q1R19	56.5%	UT-60° L	The completed examination was limited to 56.5% coverage due to nozzle configuration
1/REACTOR HEAD/N7 NOZ/WELD	HEAD-NOZZLE (HEAD VENT)	IWB-2500-7 Volumetric	B3.90	Q1R19	82.0%	UT-60° L	The completed examination was limited to 82.0% coverage due to nozzle configuration.
1/REACTOR VESSEL/N9 NOZ/WELD	VESSEL-NOZZLE (CRD RETURN)	IWB-2500-7 Volumetric	B3.90	Q1R21	81.9%	UT-60° L, 45° S	The completed examination was limited to 81.9% coverage due to nozzle configuration.

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<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
1-0201H-12"- A/N2A NOZ/WELD	VESSEL- NOZZLE (RECIRCULATION)	IWB-2500-7 Volumetric	B3.90	Q1R18	43.0%	UT-60° L, 60° S	The completed examination was limited to 43.0% coverage due to nozzle configuration.
1-0201J-12"- A/N2B NOZ/WELD	VESSEL- NOZZLE (RECIRCULATION)	IWB-2500-7 Volumetric	B3.90	Q1R18	43.0%	UT-60° L, 60° S	The completed examination was limited to 43.0% coverage due to nozzle configuration.
1-0201K-12"- A/N2C NOZ/WELD	VESSEL- NOZZLE (RECIRCULATION)	IWB-2500-7 Volumetric	B3.90	Q1R19	39.5%	UT-60° RL	The completed examination was limited to 39.5% coverage due to nozzle configuration.
1-0201L-12"- A/N2D NOZ/WELD	VESSEL- NOZZLE (RECIRCULATION)	IWB-2500-7 Volumetric	B3.90	Q1R18	43.0%	UT-60° S, 60° RL	The completed examination was limited to 43.0% coverage due to nozzle configuration.
1-0201M-12"- A/N2E NOZ/WELD	VESSEL- NOZZLE (RECIRCULATION)	IWB-2500-7 Volumetric	B3.90	Q1R18	43.0%	UT-60° L, 60° S	The completed examination was limited to 43.0% coverage due to nozzle configuration.

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**Table I4R-20.1: QCNPS Unit 1 – List of Components with Limited Examination Coverage**

<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
1-0202A-28"- A/N1A NOZ/WELD	VESSEL- NOZZLE (RECIRCULATION)	IWB-2500-7 Volumetric	B3.90	Q1R21	34.2%	UT-60° L, 70° S, 60° S  UT-60° S, 70° S, 60° L	The completed examination was limited to 34.2% total coverage due to nozzle configuration.
1-0202B-28"- A/N1B NOZ/WELD	VESSEL- NOZZLE (RECIRCULATION)	IWB-2500-7 Volumetric	B3.90	Q1R21	34.2%	UT-60° L, 70° S, 60° S	The completed examination was limited to 34.2% coverage due to nozzle configuration.
1-1403-10"- A/N5A NOZ/WELD	VESSEL- NOZZLE (CORE SPRAY)	IWB-2500-7 Volumetric	B3.90	Q1R18	42.0%	UT-60° S, 70° S, 60° L	The completed examination was limited to 42.0% coverage due to nozzle configuration and proximity of insulation support ring below. Insulation support ring located 9" below nozzle.
1-1404-10"- A/N5B NOZ/WELD	VESSEL- NOZZLE (CORE SPRAY)	IWB-2500-7 Volumetric	B3.90	Q1R19	27.7%	UT-60° RL	The completed examination was limited to 27.7% coverage due to nozzle configuration.
1-3001A-20"- B/N3A NOZ/WELD	VESSEL- NOZZLE (MAIN STEAM)	IWB-2500-7 Volumetric	B3.90	Q1R18	41.0%	UT-60° S, 70° S, 60° RL	The completed examination was limited to 41.0% coverage due to nozzle configuration.
1-3001B-20"- B/N3B NOZ/WELD	VESSEL- NOZZLE (MAIN STEAM)	IWB-2500-7 Volumetric	B3.90	Q1R18	41.0%	UT-60° S, 70° S, 60° L	The completed examination was limited to 41.0% coverage due to nozzle configuration.



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**Table I4R-20.1:** QCNPS Unit 1 – List of Components with Limited Examination Coverage

<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
1-3001C-20"- B/N3C NOZ/WELD	VESSEL- NOZZLE (MAIN STEAM)	IWB-2500-7 Volumetric	B3.90	Q1R19	37.9%	UT-60° RL	The completed examination was limited to 37.9% coverage due to nozzle configuration.
1-3001D-20"- B/N3D NOZ/WELD	NOZZLE- VESSEL (MAIN STEAM)	IWB-2500-7 Volumetric	B3.90	Q1R19	37.9%	UT-60° RL	The completed examination was limited to 37.9% coverage due to nozzle configuration.
1-3204C-12"- C/N4A NOZ/WELD	NOZZLE- VESSEL (FEEDWATER)	IWB-2500-7 Volumetric	B3.90	Q1R19	33.5%	UT-45° S, 60° L, 70° L, 60° S	The completed examination was limited to 33.5% coverage due to nozzle configuration.
1-3204D-12"- C/N4B NOZ/WELD	VESSEL- NOZZLE (FEEDWATER)	IWB-2500-7 Volumetric	B3.90	Q1R19	34.5%	UT-45° S, 60° L, 70° L, 60° S	The completed examination was limited to 34.5% coverage due to nozzle configuration and bioshield interferences.
1-3204F-12"- C/N4C NOZ/WELD	VESSEL- NOZZLE (FEEDWATER)	IWB-2500-7 Volumetric	B3.90	Q1R19	34.2%	UT- 45° S, 60° L, 70° L, 60° S	The completed examination was limited to 34.2% coverage due to nozzle configuration and bioshield interferences.
1-3204E-12"- C/N4D NOZ/WELD	VESSEL- NOZZLE (FEEDWATER)	IWB-2500-7 Volumetric	B3.90	Q1R19	33.5%	UT- 45° S, 60° L, 70° L, 60° S	The completed examination was limited to 33.5% coverage due to nozzle configuration.
1/REACTOR VESSEL/0200- W-184	RPV SKIRT	IWF-1300-1	F1.40	Q1R21	7.0%	VT-3	The completed examination was limited to 7.0% coverage due to lower portion and ID covered with permanent insulation and RTD instrumentation.

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**Table I4R-20.1:** QCNPS Unit 1 – List of Components with Limited Examination Coverage

<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
1/REACTOR VESSEL/03- F1A/WELD	NOZZLE-SAFE END	IWB-2500-8(c) IWB-2500-9 IWB-2500-10 IWB-2500-11 Volumetric	R1.20	Q1R21	86.2%	UT-E 35-65° S, 25-70° L	The completed examination was limited to 86.2% coverage due to nozzle configuration upstream and safe end configuration downstream
1-1102-1 1/2"- A/N10- F1/WELD	NOZZLE-SAFE END	IWB-2500-8(c) IWB-2500-9 IWB-2500-10 IWB-2500-11 Volumetric	R1.20	Q1R22	85.8%	UT-E 30° S 45° S 31° L 45° L 60° L	The completed examination was limited to 85.8% coverage due to the configuration and geometry of the weld, safe end and nozzle.

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**Table I4R-20.2:** QCNPS Unit 2 – List of Components with Limited Examination Coverage

<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
2/REACTOR VESSEL/RPV- VSC1- 197/WELD	RPV COURSE #1 197 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q2R18	38.0%	UT-SLIC 40/55°	The completed examination was limited to 38.0% coverage due to the proximity of the baffle plate, the jet pump, diffuser, and the core shroud repair tie rod.
2/REACTOR VESSEL/RPV- VSC2-22/WELD	RPV COURSE #2 22 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q2R18	66.0%	UT-SLIC 40/55°	The completed examination was limited to 66.0% coverage due to the proximity of the core shroud repair tie rod.
2/REACTOR VESSEL/RPV- VSC3- 197/WELD	RPV COURSE #3 197 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q2R18	75.0%	UT-SLIC 40/55°	The completed examination was limited to 75.0% coverage due to the proximity of the core spray and feedwater spargers. The guide rod, and core shroud tie rod repair brackets.
2/REACTOR VESSEL/RPV- VSC3- 317/WELD	RPV COURSE #3 317 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q2R18	79.0%	UT-SLIC 40/55°	The completed examination was limited to 79.0% coverage due to the proximity of the core spray and feedwater spargers.
2/REACTOR VESSEL/RPV- VSC3-77/WELD	RPV COURSE #3 77 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q2R18	82.0%	UT-SLIC 40/55°	The completed examination was limited to 82.0% coverage due to the proximity of the core spray and feedwater spargers.
2/REACTOR VESSEL/RPV- VSC4- 219/WELD	RPV COURSE #4 219 DEG VERT SEAM	IWB-2500-2 Volumetric	B1.12	Q2R17	86.0%	UT-SLIC 40/0°/55°	The completed examination was limited to 86.0% coverage due to the proximity of the Steam Dryer Support Bracket.
2/REACTOR HEAD/RPV- THHF/WELD	RPV TOP HEAD TO FLANGE WELD	IWB-2500-5 Volumetric and Surface	B1.40	Q2R19	67.2%	UT- 60° RL; MT	The completed examination was limited to 67.2% coverage due to the proximity of the Top Head Flange.

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**Table I4R-20.2:** QCNPS Unit 2 – List of Components with Limited Examination Coverage

<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
2/REACTOR HEAD/N6A NOZ/WELD	HEAD-NOZZLE (HEAD SPRAY)	IWB-2500-7 Volumetric	B3.90	Q2R19	63.3%	UT-60° RL, 45° S, 60° S	The completed examination was limited to 63.3% coverage due to nozzle configuration.
2/REACTOR HEAD/N6B NOZ/WELD	HEAD-NOZZLE (SPARE NOZZLE)	IWB-2500-7 Volumetric	B3.90	Q2R19	63.3%	UT-60° RL, 45° S, 60° S	The completed examination was limited to 63.3% coverage due to nozzle configuration.
2/REACTOR HEAD/N7 NOZ/WELD	HEAD-NOZZLE (HEAD VENT)	IWB-2500-7 Volumetric	B3.90	Q2R19	82.5%	UT-60° RL, 60° S	The completed examination was limited to 82.5% coverage due to nozzle configuration.
2/REACTOR VESSEL/N9 NOZ/WELD	VESSEL-NOZZLE (CRD RETURN)	IWB-2500-7 Volumetric	B3.90	Q2R19	77.5%	UT-60° RL, 45° S	The completed examination was limited to 77.5% coverage due to nozzle configuration and insulation support bracket.
2-0201H-12"-A/N2A NOZ/WELD	VESSEL-NOZZLE (RECIRCULATION)	IWB-2500-7 Volumetric	B3.90	Q2R17	28.0%	UT-0° L, 60° RL, 45° S	The completed examination was limited to 28.0% coverage due to nozzle configuration.
2-0201J-12"-A/N2B NOZ/WELD	VESSEL-NOZZLE (RECIRCULATION)	IWB-2500-7 Volumetric	B3.90	Q2R18	37.2%	UT-60° RL, 60° S	The completed examination was limited to 37.2% coverage due to nozzle configuration.

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**Table I4R-20.2:** QCNPS Unit 2 – List of Components with Limited Examination Coverage

<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
2-0201K-12"- A/N2C NOZ/WELD	VESSEL- NOZZLE (RECIRCULA- TION)	IWB-2500-7 Volumetric	B3.90	Q2R17	28.0%	UT-0° L, 60° RL, 45° S	The completed examination was limited to 28.0% coverage due to nozzle configuration.
2-0201L-12"- A/N2D NOZ/WELD	VESSEL- NOZZLE (RECIRCULA- TION)	IWB-2500-7 Volumetric	B3.90	Q2R18	37.2%	UT- 60° RL, 60° S	The completed examination was limited to 37.2% coverage due to nozzle configuration.
2-0201M-12"- A/N2E NOZ/WELD	VESSEL- NOZZLE (RECIRCULA- TION)	IWB-2500-7 Volumetric	B3.90	Q2R18	37.2%	UT-60° RL, 60° S	The completed examination was limited to 37.2% coverage due to nozzle configuration.
2-0202A-28"- A/N1A NOZ/WELD	VESSEL- NOZZLE (RECIRCULA- TION)	IWB-2500-7 Volumetric	B3.90	Q2R18	21.0%	UT-60° RL, 60° S, 70° S	The completed examination was limited to 21.0% coverage due to nozzle configuration.
2-0202B-28"- A/N1B NOZ/WELD	VESSEL- NOZZLE (RECIRCULA- TION)	IWB-2500-7 Volumetric	B3.90	Q2R20	35.4%	UT-60° RL, 60° S, 70° S	The completed examination was limited to 35.4% coverage due to nozzle configuration.
2-1403-10"- A/N5A NOZ/WELD	VESSEL- NOZZLE (CORE SPRAY)	IWB-2500-7 Volumetric	B3.90	Q2R19	43.1%	UT- 60° RL, 60° S	The completed examination was limited to 43.1% coverage due to nozzle configuration and insulation support bracket.

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**Table I4R-20.2:** QCNPS Unit 2 – List of Components with Limited Examination Coverage

<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
2-1404-10"- A/N5B NOZ/WELD	VESSEL- NOZZLE (CORE SPRAY)	IWB-2500-7 Volumetric	B3.90	Q2R19	43.1%	UT- 60° RL, 60° S	The completed examination was limited to 43.1% coverage due to nozzle configuration and insulation support bracket.
2-3001B-20"- B/N3B NOZ/WELD	VESSEL- NOZZLE (MAIN STEAM)	IWB-2500-7 Volumetric	B3.90	Q2R19	40.8%	UT- 60° RL, 60° S, 70° S	The completed examination was limited to 40.8% coverage due to nozzle configuration.
2-3001D-20"- B/N3D NOZ/WELD	VESSEL- NOZZLE (MAIN STEAM)	IWB-2500-7 Volumetric	B3.90	Q2R19	40.8%	UT- 60° RL, 60° S, 70° S	The completed examination was limited to 40.8% coverage due to nozzle configuration.
2-3204C-12"- C/N4A NOZ/WELD	VESSEL- NOZZLE (FEEDWATER)	IWB-2500-7 Volumetric	B3.90	Q2R17	33.0%	UT-0° L, 60° RL, 45° S	The completed examination was limited to 33.0% coverage due to nozzle configuration, thermocouple pad, and bioshield interferences.
2-3204D-12"- C/N4B NOZ/WELD	VESSEL- NOZZLE (FEEDWATER)	IWB-2500-7 Volumetric	B3.90	Q2R17	33.0%	UT-0° L, 60° RL, 45° S	The completed examination was limited to 33.0% coverage due to nozzle configuration and bioshield interferences.
2-3204F-12"- C/N4C NOZ/WELD	VESSEL- NOZZLE (FEEDWATER)	IWB-2500-7 Volumetric	B3.90	Q2R17	33.0%	UT-0° L, 60° RL, 45° S	The completed examination was limited to 33.0% coverage due to nozzle configuration, thermocouple pad, and bioshield interferences.
2-3204E-12"- C/N4D NOZ/WELD	VESSEL- NOZZLE (FEEDWATER)	IWB-2500-7 Volumetric	B3.90	Q2R17	33.0%	UT-0° L, 60° RL, 45° S	The completed examination was limited to 33.0% coverage due to nozzle configuration and bioshield interferences.

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**Table I4R-20.2:** QCNPS Unit 2 – List of Components with Limited Examination Coverage

<b>Component ID</b>	<b>Weld Description</b>	<b>Exam Requirements</b>	<b>Item Number</b>	<b>Outage Examined</b>	<b>Actual Coverage</b>	<b>Exam Type</b>	<b>Remarks</b>
2/REACTOR VESSEL/0200- W-178	RPV SKIRT	IWF-1300-1	F1.40	Q2R21	5.3%	VT-3	The completed examination was limited to 5.3% coverage due to lower portion and ID covered with permanent insulation and RTD instrumentation.