

ATTACHMENT A

Technical Specification

Page Revisions

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
August, 1983

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ITEM 4.4 (CATEGORY G-2) - Pressure-Retaining Bolting

The bolting connections joining the upstream side of the pressurizer safety valves to the relief line will be examined in accordance with Section XI of the ASME Code, as shown in Table 4.2-1.

ITEM 4.5 (CATEGORY K-1) - Integrally-Welded Supports

The accessible integrally-welded supports in the Indian Point Unit No. 2 piping systems subject to this inspection will be examined in accordance with Section XI of the Code. The examinations scheduled are shown in Table 4.2-1.

ITEM 4.6 (CATEGORY K-2) - Piping Support and Hanger

The accessible piping supports and hangers of the piping systems subject to this inspection will be examined in accordance with the Code. The examinations scheduled are shown in Table 4.2-1.

E. Pump Pressure Boundary

The only pumps subject to inspection are the reactor coolant pumps. The following items apply to these pumps.

ITEM 5.1 (CATEGORY L-1) - Pump Casing Welds

The reactor coolant pump casing is a weldment of four segments. A volumetric inspection of the pump casing welds shall be made at the end of the second ten year inspection interval which begins July 1984. The pumps shall be visually examined during system leakage and hydrostatic tests per IWA-5000 and IWB-5000 of ASME Code Section XI. In addition, the exterior portion of the welds on one pump shall be surface examined per IWA-2222 during each inspection interval.

ITEM 5.2 (CATEGORY L-2) - Pump Casings

The internal pressure boundary surfaces of the reactor coolant pump casings are not accessible during normal operation or refueling outages. If removal of the pump internals is required during an inspection interval, there will be a visual examination of the internal surfaces of one disassembled pump casing to the extent permitted by the disassembly. Otherwise, the examination of the internal surfaces of one disassembled pump casing will be performed at or near the end of the second inspection interval coincidental with the pump casing welds inspection, item 5.1.

ITEM 5.3 (CATEGORY F) - Nozzle-to-Safe-End Welds

There are no nozzle-to-safe-end welds on the Indian Point Unit No. 2 reactor coolant pumps.

ITEM 5.4 (CATEGORY G-1) - Pressure-Retaining Bolting

The reactor coolant pump main flange studs are greater than two (2) inches in diameter. These studs will be examined in accordance with the Code. The examinations scheduled are shown in Table 4.2-1.

ITEM 5.5 (CATEGORY G-2) - Pressure-Retaining Bolting

There is pressure-retaining bolting less than two (2) inches in diameter, associated with the reactor coolant pump seals. Since this bolting is not normally accessible, examination of this bolting will be performed only when the pump is disassembled for maintenance purposes.

ITEM 5.6 (CATEGORY K-1) - Integrally-Welded Supports

The reactor coolant pump supports consist of a cast foot welded to the pump casing. There are no currently known techniques for ultrasonically inspecting these welds. The examinations scheduled are shown in Table 4.2-1.

ITEM 5.7 (CATEGORY K-2) - Supports and Hangers

The reactor coolant pump supports will be visually examined during the inspection interval in accordance with Section XI of the Code. The examinations scheduled are shown in Table 4.2-1.

TABLE 4.2-1 (Sheet 9 of 11)

<u>Item No.</u>	<u>Examination Category</u>	<u>Components and Parts to be Examined</u>	<u>Method</u>	<u>Extent of Examination (Percent in 10 Year Interval)</u>	<u>Remarks</u>
4.5	K-1	Integrally-welded supports	V & PT	25%	Exception is taken for supports which are not accessible. No meaningful ultrasonic examination can be performed on these welds. PT base line will be established during the first inspection interval.
4.6	K-2	Piping support and hangers	V	100%	Exception is taken for those supports which are not accessible.
		RC PUMP PRESSURE BOUNDARY			
5.1	L-1	Pump casing welds	PT	100%	The reactor coolant pump casing is a weldment of four segments. A volumetric inspection of the pump casing welds shall be made at the end of the second ten year inspection interval which begins July 1984. The pumps shall be visually examined during system leakage and hydrostatic tests per IWA-5000 and IWB-5000 of ASME Code Section XI. In addition, the exterior portion of the welds on one pump shall be surface examined per IWA-2222 during each inspection interval.

[next page: sheet 9a of 11]

TABLE 4.2-1 (Sheet 9a of 11)

Amendment No.

<u>Item No.</u>	<u>Examination Category</u>	<u>Components and Parts to be Examined</u>	<u>Method</u>	<u>Extent of Examination (Percent in 10 Year Interval)</u>	<u>Remarks</u>
5.2	L-2	Pump casings	V	See Remarks	The internal pressure boundary surfaces of the reactor coolant pump casings are not accessible during normal operation or refueling outages. If removal of the pump internals is required during the inspection interval, there will be a visual examination of the internal surfaces of one disassembled pump casing to the extent permitted by the disassembly. Otherwise, the examination of the internal surfaces of one disassembled pump casing will be performed at or near the end of the second inspection interval coincidental with the pump casing welds inspection, item 5.1.
5.3	F	Nozzle-to-safe-end welds		Not Applicable	
5.4	G-1	Pressure-retaining bolting	UT & V	100%	

[next page: sheet 10 of 11]

ATTACHMENT B

Safety Assessment

Consolidated Edison Company of New York, Inc.
Indian Pont Unit No. 2
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Safety Assessment

The Technical Specifications and the Inservice Inspection and Testing Program state that no volumetric inspections of the reactor coolant pump casing welds are planned because there are no proven means of volumetrically inspecting the welds in service. The Technical Specifications currently indicate that the accessible internal surfaces of a pump casing weld shall be visually and liquid penetrant examined coincidental with a visual interior examination of a disassembled pump at or near the end of the inspection interval. Interim relief from performing the volumetric inspections was granted in an NRC October 28, 1977 letter from Mr. R. Reid to Mr. W. J. Cahill (Con Edison).

In the last several years volumetric examinations of reactor coolant pump casing welds have been accomplished using a newly developed miniature linear accelerator (MINAC) and/or a high strength radiation source. We believe, however, that volumetric examinations of the pump casing welds, surface and visual examination of the internal weld surfaces and visual examinations of the pump interior surface is not warranted considering the pump material properties, industry operating experience, industry inspection results and the difficulty of performing the inspections.

Detailed justification for not performing these examinations is as follows:

1. The reactor coolant pump casing contains three welds joining four type 316 cast stainless steel segments with a wall thickness ranging from approximately 8 1/2 to 11 1/4 inches. The 316 SS in conjunction with PWR water chemistry controls has proven to be highly resistant to stress corrosion mechanisms.
2. The 316 SS material has demonstrated a long term ability to maintain ductile properties thus minimizing potential non-ductile fracture considerations.
3. The pump casing design minimizes the potential of generating service induced flaws through fatigue.
4. There have been no operational problems at Indian Point 2 throughout the plant life associated with the reactor coolant pump casings. Although two pumps were partially disassembled to investigate the condition of the thermal barrier labyrinth seal ring a visual inspection of the pump casings interior surface could not be accomplished because of high radiation fields and the presence of the diffuser, diffuser adapter and the casing adapter.
5. Industry experience in general has demonstrated no discernible degradation of pump casing welds.
6. Five volumetric examinations of Model 93 Westinghouse pumps have shown no detectable service induced flaws.

7. Disassembly of the pumps is not required for normal operation or for maintenance. Since the pumps were not designed for ease of performing inservice examinations the potential exists for damaging the pumps during disassembly and reassembly.
8. Personnel exposure for this inspection is considered excessive. Based on industry experience at three (3) plants, personnel exposure ranges from about 36 to 93 man-rem for performing this inspection and for support activities such as insulation removal and replacement. It is anticipated that comparably high exposures to perform this inspection would also result at Indian Point Unit 2. These high exposure levels for this inspection compare with other ASME Section XI inspections as follows:

	<u>Total Number ASME Section XI Inspections</u>	<u>Total-Personnel Exposure</u>	<u>Total Average Exposure per Inspection</u>
1981	190	18.9 Man Rem	100 millirem
1982	258	28.5 Man Rem	110 millirem

9. The cost for performing the inspection is considered excessive. For example, based on discussions with the organization which provides the MINAC, the direct costs for inspection are on the the order of \$400,000 to \$500,000 for the machine use and operation with the necessary personnel. This estimate does not include the additional substantial amount related to indirect support for work such as scaffolding, insulation removal and replacement and pump disassembly and reassembly.

In summary, the above factors support the conclusion that a volumetric examination of the reactor coolant pump casing welds and a visual examination of the casing interior is not currently warranted. However, evolving inspection techniques and or operating experience may in the future support or warrant such examinations. Accordingly, it is proposed that the requirement to perform these examinations be postponed until the end of the second ten year inspection interval which begins July 1984, at which time the need for such examinations will again be evaluated. We intend to perform alternate inspections during the remainder of the current inspection interval and during the second inspection interval. These will consist of a visual inspection of the pumps during performance of system leakage and hydrostatic tests per IWA-5000 and IWB-5000, plus a surface examination of the exterior portion of the welds on one pump during each inspection interval per IWA-2222 of ASME Section XI. These alternate examinations will also substitute for the current Technical Specification requirements to visually and liquid penetrant examine the internal surface of one pump casing weld.

The proposed changes do not in any way alter the safety analyses performed for Indian Point Unit No. 2. Based upon the above justification, we believe the structural integrity of the reactor coolant pump casings will be maintained sufficient to assure that public health and safety are unaffected. Accordingly, pursuant to the requirements of 10 CFR 50.92(c) we have concluded that this amendment involves no significant hazards consideration.

The proposed changes have been reviewed by the Station Nuclear Safety Committee and the Consolidated Edison Nuclear Facilities Safety Committee. Both committees concur that the proposed changes do not represent a significant hazards consideration and will not cause any change in the types or an increase in the amounts of effluents or any change in the authorized power level of the facility.