TEN YEAR
INSERVICE INSPECTION AND TESTING PROGRAM
(July 1, 1984 - June 30, 1994)

QUALITY GROUP A, B & C COMPONENTS
AND THEIR SUPPORTS

INDIAN POINT
UNIT NO. 2

Docket No. 50-247

Consolidated Edison Company of New York, Inc.

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SECTION 1

INSERVICE INSPECTION AND TESTING PROGRAM

GENERAL INFORMATION

INDIAN POINT
UNIT NO. 2

Indian Point Unit No. 2
Inservice Inspection And Testing Program

1.1 Introduction

The Inservice Inspection (ISI) Program described herein pertains to this unit's second ten year interval (July 1, 1984 through June 30, 1994) and is in accordance with 10CFR50.55a(g). The applicable Code which this program is based on is the 1980 Edition with addenda through Winter 1981 of Section XI of the ASME Boiler and Pressure Vessel Code.

Consolidated Edison organizations responsible for implementing this ISI program are:

- Quality Assurance and Reliability (QA&R) - responsible for the performance of nondestructive examinations of piping system components and supports (excluding steam generator tubing examinations, VT-2 visual examinations for leakage and snubber tests).

- Nuclear Power (NP) - responsible for the performance of hydrostatic tests, leakage tests, VT-2 visual examinations during these tests, steam generator tubing examinations, and snubber tests.

System boundaries are in accordance with the Quality Group criteria for classification of system components as established in NRC Regulatory Guide 1.26, Revision 3.

Sections 2, 3, 4, and 5 identify the components to be inspected, the component Quality Group classification and the Section XI ASME B & PV Code required method of examination. Where the Section XI ASME B & PV Code requirements have been determined to be impractical, Relief Requests are utilized to identify the applicable Code requirement, justification for the exception taken and, where practical, the examination method to be used as an alternative. Also, notes are referenced in instances where it is deemed necessary to provide additional clarifying information with regard to the performance of examinations.

Indian Point Unit No. 2 was designed and constructed prior to the inception of Section XI of the ASME B & PV Code. Some examinations may be limited due to considerations of design, access and materials of construction. In accordance with 10CFR50.55a(g)(4), examinations in such instances will be performed to the extent practical.

Additionally, the development of the ISI program outlined in the attached sections has been based on currently available plant design information. Should certain Section XI ASME B & PV Code requirements be discovered to be impractical due to unforeseen circumstances during the process of performing inspections or tests, such situations, including the reasons for impracticality, shall be documented.

Records and documentation of information and examination results will be maintained in accordance with IWA-6000.

Examination and testing procedures followed during this inspection interval will be in accordance with Section XI ASME B & PV Code requirements as modified by applicable Relief Requests identified herein.

1.2 Personnel Qualifications

The certification of personnel as of 1985 was based on a procedure prepared in accordance with the 1975 Edition of SNT-TC-1A. Per Paragraph IWA-2300(a) of the 80/w81 Code, the certification of personnel qualified in accordance with the 1975 Edition of SNT-TC-1A will remain valid until re-certification is required. At that time recertification shall be in accordance with the 1980 Edition of SNT-TC-1A and supplementary requirements of Paragraph IWA-2300(a).

1.3 Pipe Weld Selection and Examination Criteria

In accordance with 10CFR50.55a(b)(2)(ii) and 10CFR50.55a(b)(2)(IV)(B), and specifically with regard to the extent of examination of Code Class I and II pipe welds, welds for this ISI program will be selected for examinations and examined in accordance with the requirements of the 1974 Edition and addenda through the Summer 1975 Addenda of Section XI of the ASME B & PV Code. As such, weld examination will be accordance with provisions in the following tables and paragraphs of the 74/s75 Section XI ASME Code:

- Tables IWB-2500 and IWB-2600 Category B-J, IWC-2520 Category C-F and C-G;

- Paragraphs IWC-1220 and IWC-2411.

The above mentioned tables and paragraphs will be used in lieu of the following tables and paragraphs of the 80/w81 Section XI ASME Code:

- Tables IWB-2500-1 Category B-J and IWC-2500-1 Category C-F;

- Paragraphs IWB-2420, IWC-1220 and IWC-2420.

1.4 Augmented Inspection

An augmented inspection of the reactor vessel will be performed in accordance with Amendment 95 to Paragraph 4.2 of the Indian Point Unit No. 2 Plant Technical Specifications unless and until these Plant Technical Specification provisions are eliminated.

SECTION 2

INSERVICE INSPECTION AND TESTING PROGRAM

QUALITY GROUP A COMPONENTS

INDIAN POINT
UNIT NO. 2

2.1 Inservice Inspection Criteria - Quality Group A Components

Components shall be examined and tested as specified in Table IWB-2500-1. The method of examination for the components and parts of the pressure retaining boundaries shall comply with those tabulated in Table IWB-2500-1 except in instances where references are given to Relief Requests and/or notes.

2.2 EXAMINATION TABLE IWB-2500-1

QUALITY GROUP A COMPONENTS

INDIAN POINT
UNIT NO. 2

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-A, PRESSURE RETAINING WELDS IN REACTOR VESSEL

ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM*	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
B1.10	Shell Welds			
B1.11	Circumferential	2	Volumetric	
B1.12	Longitudinal	8	Volumetric	
B1.20	Head Welds			
B1.21	Circumferential	2	Volumetric	Relief Request No. 6
B1.22	Meridional	12	Volumetric	
B1.30	Shell-to-Flange Weld	1	Volumetric	
B1.40	Head-to-Flange Weld	1	Volumetric and Surface	
B1.50	Repair Welds			
B1.51	Beltline Region	1	Volumetric	Note No. 1

* The "Total Per Item" quantities are based on current plant design. This number may be revised if the design changes. Variations in these items will be identified in the detailed ISI Program available at the plant site.

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-B, PRESSURE RETAINING WELDS IN VESSELS OTHER THAN REACTOR VESSELS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Pressurizer			
B2.10	Shell-to-Head Welds			Relief Request No. 7
B2.11	Circumferential	2	Volumetric	
B2.12	Longitudinal	3	Volumetric	
B2.20	Head Welds			
B2.21	Circumferential	-	-	Note No. 2
B2.22	Meridional	-	-	
	Steam Generators (Primary Side)			
B2.30	Head Welds			
B2.31	Circumferential	-	-	
B2.32	Meridional	-	-	
B2.40	Tubesheet-to-Head Weld	4	Volumetric	
	Heat Exchangers (Primary Side) -- Head			
B2.50	Head Welds			
B2.51	Circumferential	6	Volumetric	Relief Request No. 8
B2.52	Meridional	-	-	
B2.53	Longitudinal	-	-	
	Shell (Primary Side)			
B2.60	Tubesheet-to-Shell (or Head) Welds	-	-	
B2.61	Tubesheet-to-Shell Welds	6	Volumetric	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-D, FULL PENETRATION WELDS OF NOZZLES IN VESSELS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Reactor Vessel			
B3.90	Nozzle-to-Vessel Welds	8	Volumetric	
B3.100	Nozzle Inside Radius Section	8	Volumetric	
	Pressurizer			
B3.110	Nozzle-to-Vessel Welds	-	-	
B3.120	Nozzle Inside Radius Section	6	Volumetric	Relief Request No. 9
	Steam Generators (Primary Side)			
B3.130	Nozzle-to-Vessel Welds	-	-	
B3.140	Nozzle Inside Radius Section	8	Volumetric	Relief Request No. 10
	Heat Exchangers (Primary Side)			
B3.150	Nozzle-to-Vessel Welds	12	Volumetric	Relief Request No. 8
B3.160	Nozzle Inside Radius Section	12	Volumetric	Relief Request No. 8

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-E, PRESSURE RETAINING PARTIAL PENETRATION WELDS IN VESSELS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
B4.10	Partial Penetration Welds			
B4.11	Vessel Nozzles	-	-	
B4.12	Control Rod Drive Nozzles	97	Visual, VT-2	
B4.13	Instrumentation Nozzles	58	Visual, VT-2	
	Pressurizer			
B4.20	Heater Penetration Welds	78	Visual, VT-2	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-F, PRESSURE RETAINING DISSIMILAR METAL WELDS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Reactor Vessel			
B5.10	Nominal Pipe Size ≥ 4 in. Nozzle-to-Safe End Butt Welds	8	Volumetric and surface	Relief Request No. 11
B5.20	Nominal Pipe Size < 4 in. Nozzle-to-Safe End Butt Welds	-	-	
B5.30	Nozzle-to-Safe End Socket Welds	-	-	
	Pressurizer			
B5.40	Nominal Pipe Size ≥ 4 in. Nozzle-to-Safe End Butt Welds	6	Volumetric and surface	Relief Request No. 12
B5.50	Nominal Pipe Size < 4 in. Nozzle-to-Safe End Butt Welds	-	-	
B5.60	Nozzle-to-Safe End Socket Welds	-	-	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-F -- CONTINUED				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Steam Generator			
B5.70	Nominal Pipe Size ≥ 4 in. Nozzle-to-Safe End Butt Welds	8	Volumetric and surface	Relief Request No. 12
B5.80	Nominal Pipe Size < 4 in. Nozzle-to-Safe End Butt Welds	-	-	
B5.90	Nozzle-to-Safe End Socket Welds	-	-	
	Heat Exchangers			
B5.100	Nominal Pipe Size ≥ 4 in. Nozzle-to-Safe End Butt Welds	-	-	
B5.110	Nominal Pipe Size < 4 in. Nozzle-to-Safe End Butt Welds	-	-	
B5.120	Nozzle-to-Safe End Socket Welds	-	-	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-F -- CONTINUED				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Piping			
B5.130	Nominal Pipe Size ≥ 4 in. Dissimilar Metal Butt Welds	-	-	
B5.140	Nominal Pipe Size < 4 in. Dissimilar Metal Butt Welds	-	-	
B5.150	Dissimilar Metal Socket Welds	-	-	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-G-1, PRESSURE RETAINING BOLTING, GREATER THAN 2 IN. IN DIAMETER				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Reactor Vessel			
B6.10	Closure Head Nuts	54	Surface	
B6.20	Closure Studs, in place	-	-	
B6.30	Closure Studs, when removed	54	Surface and volumetric	
B6.40	Threads in Flange	54	Volumetric	
B6.50	Closure Washers, Bushings	54	Visual, VT-1	
	Pressurizer			
B6.60	Bolts and Studs	-	-	
B6.70	Flange Surface, when connection disassembled	-	-	
B6.80	Nuts, Bushings, and Washers	-	-	
	Steam Generators			
B6.90	Bolts and Studs	-	-	
B6.100	Flange Surface, when connection disassembled	-	-	
B6.110	Nuts, Bushings, and Washers	-	-	
	Heat Exchangers			
B6.120	Bolts and Studs	-	-	
B6.130	Flange Surface, when connection disassembled	-	-	
B6.140	Nuts, Bushings, and Washers	-	-	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-G-1, CONTINUED				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Piping			
B6.150	Bolts and Studs	-	-	
B6.160	Flange Surface, when connection disassembled	-	-	
B6.170	Nuts, Bushings, and Washers	-	-	
	Pumps			
B6.180	Bolts and Studs	96	Volumetric	
B6.190	Flange Surface, when connection disassembled	96	Visual, VT-1	
B6.200	Nuts, Bushings, and Washers	96	Visual, VT-1	
	Valves			
B6.210	Bolts and Studs	-	-	
B6.220	Flange Surface, when connection disassembled	-	-	
B6.230	Nuts, Bushings, and Washers	-	-	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-G-2, PRESSURE RETAINING BOLTING, 2 IN. AND LESS IN DIAMETER				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
B7.10	Reactor Vessel Bolts, Studs, and Nuts	7	Visual, VT-1	
B7.20	Pressurizer Bolts, Studs, and Nuts	1	Visual, VT-1	
B7.30	Steam Generators Bolts, Studs, and Nuts	8	Visual, VT-1	
B7.40	Heat Exchangers Bolts, Studs, and Nuts	-	-	
B7.50	Piping Bolts, Studs, and Nuts	11	Visual, VT-1	
B7.60	Pumps Bolts, Studs, and Nuts	4	Visual, VT-1	
B7.70	Valves Bolts, Studs, and Nuts	35	Visual, VT-1	
B7.80	CRD Housings Bolts, Studs, and Nuts	-	-	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-H, INTEGRAL ATTACHMENTS FOR VESSELS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
B8.10	Reactor Vessel Integrally Welded Attachments	7	Volumetric or surface, as applicable	
B8.20	Pressurizer Integrally Welded Attachments	1	Volumetric or surface, as applicable	
B8.30	Steam Generator Integrally Welded Attachments	-	-	
B8.40	Heat Exchangers Integrally Welded Attachments	-	-	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-H, PRESSURE RETAINING WELDS IN PIPING				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
B9.10	Nominal Pipe Size ≥ 4 in.			
B9.11	Circumferential Welds	183	Surface and volumetric	
B9.12	Longitudinal Welds	16	Surface and volumetric	
B9.20	Nominal Pipe Size < 4 in.			
B9.21	Circumferential Welds	134	Surface	Note No. 3
B9.22	Longitudinal Welds	-	-	
B9.30	Branch Pipe Connection Welds			
B9.31	Nominal Pipe Size ≥ 4 in.	5	Surface and volumetric	
B9.32	Nominal Pipe Size < 4 in.	12	Surface	
B9.40	Socket Welds	360	Surface	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-K-1, INTEGRAL ATTACHMENTS FOR PIPING, PUMPS, AND VALVES				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
B10.10	Piping Integrally Welded Attachments	3	Volumetric or surface, as applicable	
B10.20	Pumps Integrally Welded Attachments	12	Volumetric or surface, as applicable	
B10.30	Valves Integrally Welded Attachments	-	-	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-L-1, B-M-1 PRESSURE RETAINING WELDS IN PUMP CASINGS AND VALVE BODIES B-L-2, B-M-2, PUMP CASINGS AND VALVE BODIES				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Pumps			
B12.10	Pump Casing Welds	12	Volumetric	
B12.20	Pump Casing	4	Visual, VT-3	
	Valves			
B12.30	Valves, Nominal Pipe Size < 4 in. Valve Body Welds	-	-	
B12.40	Valves, Nominal Pipe Size ≥ 4 in. Valve Body Welds	-	-	
B12.50	Valve Body, Exceeding 4 in. Nominal Pipe Size	14	Visual, VT-3	Relief Request No. 13

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-N-1, INTERIOR OF REACTOR VESSEL B-N-2, INTEGRALLY WELDED CORE SUPPORT STRUCTURES AND INTERIOR ATTACHMENTS TO REACTOR VESSELS B-N-3, REMOVABLE CORE SUPPORT STRUCTURES				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Reactor Vessel			
B13.10	Vessel Interior	1	Visual, VT-3	
	Reactor Vessel (PWR)			
B13.30	Interior Attachments Within Beltline Region	-	-	
B13.31	Interior Attachments Beyond Beltline Region	1	Visual, VT-3	
B13.32	Core Support Structure	1	Visual, VT-3	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-O, PRESSURE RETAINING WELDS IN CONTROL ROD HOUSINGS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
B14.10	Reactor Vessel Welds in CRD Housing	29	Volumetric or surface	

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-P, ALL PRESSURE RETAINING COMPONENTS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Reactor Vessel			
B15.10	Pressure Retaining Boundary	Footnote 1	Visual, VT-2	
B15.11	Pressure Retaining Boundary	Footnote 2	Visual, VT-2	
	Pressurizer			
B15.20	Pressure Retaining Boundary	Footnote 1	Visual, VT-2	
B15.21	Pressure Retaining Boundary	Footnote 2	Visual, VT-2	
	Steam Generators			
B15.30	Pressure Retaining Boundary	Footnote 1	Visual, VT-2	
B15.31	Pressure Retaining Boundary	Footnote 2	Visual, VT-2	
	Heat Exchangers			
B15.40	Pressure Retaining Boundary	Footnote 1	Visual, VT-2	
B15.41	Pressure Retaining Boundary	Footnote 2	Visual, VT-2	

Footnotes:

(1) The pressure retaining boundary during the system leakage test shall correspond to the reactor coolant system boundary with all valves in the normal position which is required for normal reactor operation startup. The VT-2 examination shall, however, extend to and include the second closed valve at the boundary extremity.

(2) The pressure retaining boundary during the system hydrostatic test shall include all Class 1 components within the system boundary.

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-P, CONTINUED				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Piping			
B15.50	Pressure Retaining Boundary	Footnote 1	Visual, VT-2	
B15.51	Pressure Retaining Boundary	Footnote 2	Visual, VT-2	
	Pumps			
B15.60	Pressure Retaining Boundary	Footnote 1	Visual, VT-2	
B15.61	Pressure Retaining Boundary	Footnote 2	Visual, VT-2	
	Valves			
B15.70	Pressure Retaining Boundary	Footnote 1	Visual, VT-2	
B15.71	Pressure Retaining Boundary	Footnote 2	Visual, VT-2	

Footnotes:

(1) The pressure retaining boundary during the system leakage test shall correspond to the reactor coolant system boundary with all valves in the normal position which is required for normal reactor operation startup. The VT-2 examination shall, however, extend to and include the second closed valve at the boundary extremity.

(2) The pressure retaining boundary during the system hydrostatic test shall include all Class 1 components within the system boundary.

TABLE IWB-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY B-Q, STEAM GENERATOR TUBING				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
B16.10	Steam Generator Tubing in Straight Tube Design	-	-	
B16.20	Steam Generator Tubing in U-Tube Design	Footnote 3	Volumetric	

Footnote:
(3) The examination requirements, examination method, and the extent and frequency of examination shall be governed by the plant Technical Specification.

2.3 Exemptions from the Inservice Inspection of Quality Group A Components

The following components (or parts of components) shall be exempted from the volumetric and surface examination requirements of IWB-2500 by provisions of IWB-1220(b):

A. Piping of 1 in. nominal pipe size and smaller, except for steam generator tubing.

B. Components and their connections in piping of 1 in. nominal pipe size and smaller.

In the event that a further review establishes that additional components other than those mentioned above are exempt per IWB-1220 criteria, they shall be identified in the detailed ISI program available at the plant site.

SECTION 3

INSERVICE INSPECTION AND TESTING PROGRAM

QUALITY GROUP B COMPONENTS

INDIAN POINT
UNIT NO. 2

3.1 Inservice Inspection Criteria - Quality Group B Components

Components shall be examined and tested as specified in Table IWC-2500-1. The method of examination for the components and parts of the pressure retaining boundaries shall comply with those tabulated in Table IWC-2500-1 except in instances where references are given to Relief Requests and/or notes.

3.2 EXAMINATION TABLE IWC-2500-1

QUALITY GROUP B COMPONENTS

INDIAN POINT
UNIT NO. 2

TABLE IWC-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY C-A, PRESSURE RETAINING WELDS IN PRESSURE VESSELS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
C1.10	Shell Circumferential Welds	23	Volumetric	Relief Request Nos. 14, 15, and 16; Note No. 4
C1.20	Head Circumferential Welds	5	Volumetric	Relief Request Nos. 14, 15, and 16; Note No. 4
C1.30	Tubesheet-to-Shell Weld	-	-	Note No. 2

TABLE IWC-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY C-B, PRESSURE RETAINING NOZZLE WELDS IN VESSELS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
C2.10	Nozzles in Vessels < 1/2 in. Nominal Thickness			
C2.11	Nozzle-to-Shell (or Head) Weld	5	Surface	Note No. 4
C2.20	Nozzles Without Reinforcing Plate in Vessels > 1/2 in. Nominal Thickness			
C2.21	Nozzle-to-Shell (or Head) Weld	3	Surface and volumetric	
C2.22	Nozzle Inside Radius Section	2	Volumetric	
C2.30	Nozzles With Reinforcing Plate in Vessels > 1/2 in. Nominal Thickness			
C2.31	Reinforcing Plate Welds to Nozzle and Vessel	4	Surface	
C2.32	Nozzle-to-Shell (or Head) Welds Inside of Vessel Accessible	-	-	

TABLE IWC-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY C-C, INTEGRAL ATTACHMENTS FOR VESSELS, PIPING, PUMPS, AND VALVES				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
C3.10	Pressure Vessels Integrally Welded Attachments	26	Surface	Relief Request No. 16, Note No. 4
C3.20	Piping Integrally Welded Attachments	194	Surface	Note No. 4
C3.30	Pumps Integrally Welded Attachments	-	-	
C3.40	Valves Integrally Welded Attachments	-	-	

TABLE IWC-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY D-D, PRESSURE RETAINING BOLTING GREATER THAN 2 IN. IN DIAMETER				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Pressure Vessels			
C4.10	Bolts and Studs	-	-	
	Piping			
C4.20	Bolts and Studs	-	-	
	Pumps			
C4.30	Bolts and Studs	-	-	
	Valves			
C4.40	Bolts and Studs	-	-	

TABLE IWC-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY C-F, PRESSURE RETAINING WELDS IN PIPING				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
C5.10	Piping Welds ≤ 1/2 in. Nominal Wall Thickness			
C5.11	Circumferential Weld	307	Surface	
C5.12	Longitudinal Weld	11	Surface	
C5.20	Piping Welds > 1/2 in. Nominal Wall Thickness			
C5.21	Circumferential Weld	290	Surface and volumetric	- Note No. 4
C5.22	Longitudinal Weld	9	Surface and volumetric	
C5.30	Pipe Branch Connections > 4 in. Nominal Branch Pipe Size			
C5.31	Circumferential Weld	30	Surface	
C5.32	Longitudinal Weld	-	-	

TABLE IWC-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY C-G, PRESSURE RETAINING WELDS IN PUMPS AND VALVES				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Pumps			
C6.10	Pump Casing Welds	-	-	
	Valves			
C6.20	Valve Body Welds	-	-	

TABLE IWC-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY C-H, ALL PRESSURE RETAINING COMPONENTS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
	Pressure Vessels			
C7.10	Pressure Retaining Components	Footnote 4	Visual, VT-2	
C7.20	Pressure Retaining Components	Footnote 4	Visual, VT-2	
	Piping			
C7.30	Pressure Retaining Components	Footnote 4	Visual, VT-2	
C7.40	Pressure Retaining Components	Footnote 4	Visual, VT-2	Relief Request Nos. 17 and 21
	Pumps			
C7.50	Pressure Retaining Components	Footnote 4	Visual, VT-2	
C7.60	Pressure Retaining Components	Footnote 4	Visual, VT-2	
	Valves			
C7.70	Pressure Retaining Components	Footnote 4	Visual, VT-2	
C7.80	Pressure Retaining Components	Footnote 4	Visual, VT-2	

Footnote:

(4) The pressure retaining boundary includes only those portions of the System required to operate or support the safety system function up to and including the first normally closed valve (including a safety or relief valve) or valve capable of automatic closure when the safety function is required.

3.3 Exemptions from the Inservice Inspection of Quality Group B Components

The following components shall be exempted from the inservice examination requirements of IWC-2500.

A. Components exempted by provisions of IWC-1220(a):

(1) 4 (four) Accumulator Tanks

(2) Boron Injection Tank

(3) Refueling Water Storage Tank

(4) Lines 155, 189 and 518 (Suction lines from Refueling Water Storage Tank to Residual Heat Removal, Safety Injection and Containment Spray Pumps).

(5) Lines 350, 351, 352 and 353 from Accumulators to isolation check valves 895(A), (B), (C) and (D).

(6) Line 199 from Boron Injection Tank to valves 1822(A) and (B).

B. Components exempted by provisions of IWC-1220(b):

(1) Lines 15, 51, 93 and 94 in the Containment Spray System.

(2) Volume Control Tank

(3) Seal Water Heat Exchanger

(4) 3 (three) Seal Water Return Filters

C. Components exempted by provisions of IWC-1220(c) include component connections (including nozzles in vessels and pumps), piping and associated valves, and vessels and their attachments that are 4 in. nominal pipe size and smaller.

In the event that a further review establishes that additional components other than those listed above are exempt per IWC-1220 criteria, they shall be identified in the detailed ISI program available at the plant site.

SECTION 4

INSERVICE INSPECTION AND TESTING PROGRAM

QUALITY GROUP C COMPONENTS

INDIAN POINT
UNIT NO. 2

4.1 Inservice Inspection Criteria - Quality Group C Components

Components shall be examined and tested as specified in Table IWD-2500-1. The method of examination for the components and parts of the pressure retaining boundaries shall comply with those tabulated in IWD-2500-1 except in instances where references are given to Relief Requests and/or notes.

4.2 EXAMINATION TABLE IWD-2500-1

QUALITY GROUP C COMPONENTS

INDIAN POINT
UNIT NO. 2

TABLE IWD-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY D-A, SYSTEMS IN SUPPORT OF REACTOR SHUTDOWN FUNCTION				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
D1.10	Pressure Retaining Components	Footnote 5	Visual, VT-2	Relief Request No. 18
		Footnote 5	Visual, VT-2	
D1.20	Integral Attachment -- Component Supports and Restraints	21	Visual, VT-3	Note No. 5
D1.30	Integral Attachment -- Mechanical and Hydraulic Snubbers	-	-	
D1.40	Integral Attachment -- Spring Type Supports	-	-	
D1.50	Integral Attachment -- Constant Load Type Supports	-	-	
D1.60	Integral Attachment -- Shock Absorbers	-	-	

Footnote:

(5) The system boundary extends up to and including the first normally closed valve or valve capable of automatic closure as required to perform the safety-related system function.

TABLE IWD-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY D-B, SYSTEMS IN SUPPORT OF EMERGENCY CORE COOLING, CONTAINMENT HEAT REMOVAL, ATMOSPHERE CLEANUP AND REACTOR RESIDUAL HEAT REMOVAL

ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
D2.10	Pressure Retaining Components	Footnote 5	Visual, VT-2	Relief Request Nos. 18, 19 and 22
		Footnote 5	Visual, VT-2	
D2.20	Integral Attachment -- Component Supports and Restraints	55	Visual, VT-3	Note No. 5
D2.30	Integral Attachment -- Mechanical and Hydraulic Snubbers	-	-	
D2.40	Integral Attachment -- Spring Type Supports	-	-	
D2.50	Integral Attachment -- Constant Load Type Supports	-	-	
D2.60	Integral Attachment -- Shock Absorbers	-	-	

Footnote:

(5) The system boundary extends up to and including the first normally closed valve or valve capable of automatic closure as required to perform the safety-related system function.

TABLE IWD-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY D-C, SYSTEMS IN SUPPORT OF RESIDUAL HEAT REMOVAL FROM SPENT FUEL STORAGE POOL

ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
D3.10	Pressure Retaining Components	Footnote 5	Visual, VT-2	Relief Request No. 18
		Footnote 5	Visual, VT-2	
D3.20	Integral Attachment -- Component Supports and Restraints	5	Visual, VT-3	Note No. 5
D3.30	Integral Attachment -- Mechanical and Hydraulic Snubbers	-	-	
D3.40	Integral Attachment -- Spring Type Supports	-	-	
D3.50	Integral Attachment -- Constant Load Type Supports	-	-	
D3.60	Integral Attachment -- Shock Absorbers	-	-	

Footnote:

(5) The system boundary extends up to and including the first normally closed valve or valve capable of automatic closure as required to perform the safety-related system function.

4.3 Exemptions from the Inservice Inspection of Quality Group C Components

The following components shall be exempted from the inservice examination requirements of IWD-2500.

A. Components exempted by provisions of IWD-1220.1:

(1) Integral attachments of supports and restraints to components in all systems except for Auxiliary Feedwater lines and the Main Steam line to the Turbine Driven Auxiliary Feedwater Pump:

1514	1517	1520
1515	1518	1521
1516	1519	1501 (MS-TD AFW Pump)

B. Components exempted by provisions of IWD-1220.2:

(1) Integral attachments of supports and restraints to components in Component Cooling System lines:

13	167	515
14	168	516
148	325	
149	326	

(2) Integral attachments of supports and restraints to components in Service Water System lines:

408

409

410

(3) Integral attachments of supports and restraints to components in Spent Fuel Pit Cooling System lines:

327

328

329

In the event that a further review establishes that additional components other than those listed above are exempt per IWD-1220 criteria, they shall be identified in the detailed ISI program available at the plant site.

SECTION 5

INSERVICE INSPECTION AND TESTING PROGRAM

COMPONENT SUPPORTS (IWF)

INDIAN POINT
UNIT NO. 2

5.1 Inservice Inspection Criteria - Component Supports

Component supports subject to examination shall be examined in accordance with Table IWF-2500-1. The component supports selected for examination under IWF-2500-1 shall be those components that are required to be examined under IWB, IWC and IWD.

5.2 EXAMINATION TABLE IWF-2500-1

COMPONENT SUPPORTS

INDIAN POINT
UNIT NO. 2

TABLE IWF-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY F-A, PLATE AND SHELL TYPE SUPPORTS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
F1.10	Mechanical connections to pressure retaining components and building structure	Footnote 6	Visual, VT-3	
F1.20	Weld connections to building structure	Footnote 6	Visual, VT-3	
F1.30	Weld and mechanical connections at intermediate joints in multiconnected integral and nonintegral supports	Footnote 6	Visual, VT-3	
F1.40	Component displacement settings of guides and stops, misalignment of supports, assembly of support items	Footnote 6	Visual, VT-3	

Footnote:

(6) Component supports selected for examination shall be the supports of those components that are required to be examined under IWB, IWC and IWD during the first inspection interval.

TABLE IWF-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY F-B, LINEAR TYPE SUPPORTS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
F2.10	Mechanical connections to pressure retaining components and building structure	Footnote 6	Visual, VT-3	
F2.20	Weld connections to building structure	Footnote 6	Visual, VT-3	
F2.30	Weld and mechanical connections at intermediate joints in multiconnected integral and nonintegral supports	Footnote 6	Visual, VT-3	
F2.40	Component displacement settings of guides and stops, misalignment of supports, assembly of support items	Footnote 6	Visual, VT-3	

Footnote:

(6) Component supports selected for examination shall be the supports of those components that are required to be examined under IWB, IWC and IWD during the first inspection interval.

TABLE IWF-2500-1
EXAMINATION CATEGORIES

EXAMINATION CATEGORY F-C, COMPONENT STANDARD SUPPORTS				
ITEM NO.	PARTS EXAMINED	TOTAL PER ITEM	EXAMINATION METHOD	RELIEF REQUESTS AND/OR NOTES
F3.10	Mechanical connections to pressure retaining components and building structure	Footnote 6	Visual, VT-3	
F3.20	Weld connections to building structure	Footnote 6	Visual, VT-3	
F3.30	Weld and mechanical connections at intermediate joints in multiconnected integral and nonintegral supports	Footnote 6	Visual, VT-3	
F3.40	Component displacement settings of guides and stops, misalignment of supports, assembly of support items	Footnote 6	Visual, VT-3	
F3.50	Spring type supports, constant load type supports, shock absorbers, hydraulic and mechanical type snubbers	Footnote 6	Visual, VT-4	

Footnote:

(6) Component supports selected for examination shall be the supports of those components that are required to be examined under IWB, IWC and IWD during the first inspection interval.

SECTION 6

INSERVICE INSPECTION AND TESTING PROGRAM

NOTES REFERENCED IN EXAMINATION TABLES

INDIAN POINT
UNIT NO. 2

6.1 Notes Referenced in Examination Tables

(1) An augmented inspection of the reactor vessel beltline region will be performed as previously noted in the General section of this program (1.4 - "Augmented Inspection").

(2) Throughout the Examination Tables, many items identified do not pertain to Indian Point Unit No. 2. Such items are identified by dashes (i.e. - "-") in the "Total Per Item" and "Examination Method" columns.

(3) Items in this category are exempted from examination requirements by Code provisions. See 2.3 - "Exemptions from the Inservice Inspection of Quality Group A Components".

(4) Items in this category are exempted from examination requirements by Code provisions. See 3.3 - "Exemptions from the Inservice Inspection of Quality Group B Components".

(5) Items in this category are exempted from examination requirements by Code provisions. See 4.3 - "Exemptions from the Inservice Inspection of Quality Group C Components".

SECTION 7

INSERVICE INSPECTION AND TESTING PROGRAM

RELIEF REQUESTS

INDIAN POINT
UNIT NO. 2

7.1 Relief Requests

Relief Requests have been submitted in cases where Section XI ASME B & PV requirements are deemed to be impractical.

Relief Requests Nos. 6 through 19, 21 and 22 are referenced in the Examination Tables. These Relief Requests are applicable to specific examination categories identified in the Tables.

Relief Requests Nos. 1 through 5, 20 and 23 are not referenced in the Examination Tables. The Code provisions to which they apply are of a more general nature and are contained in various sections of the Code.

Relief Request 1

1. Components for Which Relief is Requested

   (a) Name: Class 2 and 3 Piping
   (b) Function: Various
   (c) ASME Section XI Code Classes 2 and 3

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of IWA-4400(a) and IWA-4600 regarding the performance of system hydrostatic tests after repairs and/or replacements by welding on the pressure retaining boundary.

3. Alternate Provisions

   In cases where Class 2 or 3 piping cannot be isolated by existing valves or that requires securing safety or relief valves for isolation, the system hydrostatic test required subsequent to repair or replacement of Class 2 and 3 piping may be deferred until the next regularly scheduled system hydrostatic test provided both of the following conditions are met:

   (a) Prior to or immediately upon return to service, a visual examination (VT-2) for leakage shall be conducted during a system functional test or during a system inservice test in the repaired or replaced portion of the piping system.

   (b) The repair or replacement welds shall be examined in accordance with IWA-4000 and IWA-7000 using volumetric examination methods (IWA-2230) for full penetration welds or surface examination methods (IWA-2220) for partial penetration welds.

4. Basis for Requesting Relief and Alternate Provisions

   ASME Boiler and Pressure Vessel Code Case N-416 (Approval Date: December 5, 1984), "Alternate Rules for Hydrostatic Testing of Repair or Replacement of Class 2 Piping", identified the provisions stipulated above as acceptable alternate inspections for assuring the integrity of Class 2 piping following repairs or replacement. The alternate provisions stipulated in Code Case N-416 shall be extended to include Class 3 piping systems since the rationale of substituting examinations during fabrication and leakage tests as alternatives to immediate hydrostatic tests is equally applicable to Class 3 systems.

Relief Request 1 (Continued)

The requirement to secure safety or relief valves and/or the lack of ability to isolate portions of piping systems make the requirement to perform immediate hydrostatic tests impractical. The deferral of the hydrostatic tests allows for orderly design and implementation of system modifications to support performance of hydrostatic tests subsequent to repairs or replacements. The alternate examinations stipulated above provide increased plant operating flexibility while still assuring the suitable quality of repairs and replacements.

Relief Request 2

1. Components/Requirements for Which Relief is Requested

   (a) Name: Weld Preparation and Scanning Methods
   (b) Function: Weld Joints
   (c) ASME Section XI Code Classes 1 and 2

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 Article IWA-2200(b) - preparation of surface by a mechanical method for non-destructive examination and provisions of Section V 1980 Article 5, paragraphs T-547.2.1 - surface preparation of pipe weldments, T-547.2.2.2 - angle beam scanning of pipe welds and T-546.2.2.4 - angle beam scanning for reflectors oriented transverse to the weld.

3. Alternate Provisions

   In lieu of preparing the surface of welds for non-destructive examination and of utilizing the techniques stipulated in paragraphs T-547.2.2.2 and T-546.2.2.4, in instances where joint geometry and/or the surface finish of the weld precludes these techniques an alternate ultrasonic technique will be used. This technique places the search unit on the surface adjacent to the weld and directs the sound beam into the material parallel to the weld axis. The search unit is then angled a maximum of 15 degrees towards the weld to direct the beam into the weld material. The transducer is rotated from 0 to 15 degrees towards the weld while moving along the weld edge around the joint, indexing with at least 10 percent overlap. The examination is then repeated in the reverse direction along the same weld edge. Calibration of the technique will be done with the sound beam directed into the material normal to the axis of the calibration reflector.

4. Basis for Requesting Relief and Alternate Provisions

   The Indian Point Unit No. 2 piping systems were designed and constructed to codes in effect in the late 1960's. These codes did not fully provide for inservice inspection considerations such as inspection access, weld joint geometry or weld surface finish. Examinations as stipulated in paragraphs T-547.2.2.2 and T-546.2.2.4 are impractical to accomplish in some cases. Generally, these limitations exist at pipe to fitting welds where, due to the geometry of the fitting, the examination can only be performed from one side. They also exist in instances where the surface finish or the high geometry of the weld crown precludes the placement of the search unit directly on the weld surface. Where these cases exist, we will use the special technique described above to provide as much inspection coverage as is reasonably achievable.

Relief Request 3

1. Components/Requirements for Which Relief is Requested

   (a) Name: Weld Reference System
   (b) Function: Weld Location
   (c) ASME Section XI Code Classes 1, 2 and 3

2. Reference Code Requirements That Have Been Determined to be Impractical

   ASME Section XI 80/w81 Article IWA-2610-Establishment of weld reference system for all welds and areas subject to surface or volumetric examination.

3. Alternate Provisions

   Datum reference markings will be established in the event that recordable indications are to be reported. Such datum points shall either be marked on the components or have their locations adequately described in inspection documentation so that subsequent relocation can be achieved.

4. Basis for Requesting Relief and Alternate Provisions

   At the time of construction of Indian Point Unit No. 2, application of a reference system was not required. Application of such markings to each and every item or area subject to surface or volumetric examination is deemed impractical for an operating plant. In many instances, no physical access is available to permit such markings. In other instances, exposure levels prohibit their application. These alternate provisions will provide adequate traceability between the areas inspected and inspection results.

Relief Request 4

1. Components for Which Relief is Requested

   (a) Name: Buried components in redundant and isolable systems and components made inaccessible for examination due to high radiation fields, congestion of components and closed piping tunnels.
   (b) Function: Various
   (c) ASME Section XI Code Classes 1, 2 and 3

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 IWA-5240 regarding visual examinations.

3. Alternate Provisions

   The provisions of Section XI 80/w81 IWA-5244, regarding the examination of buried components, will be extended to cases where components are made inaccessible for inspection by virtue of high radiation fields, congestion of components and closed piping tunnels. In addition, Paragraph IWA-5244(a), which is currently limited to non-redundant systems, shall apply to redundant systems.

4. Basis for Requesting Relief and Alternate Provisions

   There are no provisions in the 80/w81 Code which allow for alternate examinations (i.e. - pressure test loss or change in flow test) in instances where visual examination is precluded by high radiation fields, congestion of components and/or closed piping tunnels. In such cases the alternate examination provisions as specified in IWA-5244 will apply, thus clarifying the criteria for these cases.

   Paragraph IWA-5244(a), which applies to non-redundant systems, will also be applied to redundant systems. This is necessary because the provisions of IWA-5244 currently discuss only three potential cases of redundancy and isolability. A fourth case, redundancy and isolability, exists in some systems (i.e. - Service Water System). By applying the provisions of IWA-5244(a) to this case all possible conditions of redundancy/isolability are covered.

Relief Request 5

1. Components/Requirements for Which Relief is Requested

   (a) Name: 90 day provision for Summary Report submittal
   (b) Function: Summary Report Submittal Deadline
   (c) ASME Section XI Code Class 1 and 2

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 Paragraph IWA-6230 - The requirement for summary report submittal within 90 days of the completion of the inservice inspection conducted during a refueling outage.

3. Alternate Provisions

   The report submittal will be attempted to be accomplished within the 90 day requirement stipulated in IWA-6230, however, if this time period is not feasible, the report will be submitted as soon as practical after 90 days.

4. Basis for Requesting Relief and Alternate Provisions

   Results of previous preservice and inservice examinations indicate the time required to compile, edit, review and evaluate the large quantities of documentation involved may preclude meeting the 90 day reporting requirement. If the ISI summary reports cannot be filed with enforcement and regulatory authorities within 90 days after the completion of the inservice inspection, they will be submitted as soon as practical after 90 days.

Relief Request 6

1. Components for Which Relief is Requested

   (a) Name: Circumferential Head Welds (RVHC-1 and RPVC-5)
   (b) Function: Reactor Vessel
   (c) ASME Section XI Code Class 1

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 Table IWB-2500-1, Items B1.20 and B1.21 - Volumetric examination of circumferential head welds.

3. Alternate Examinations

   In lieu of the above examination requirement, the areas will be visually examined for evidence of leakage during the performance of system hydrostatic tests.

4. Basis for Requesting Relief and Alternate Examination

   The closure head peel segment to disc circumferential weld (RVHC-1) is completely enclosed within the pattern of CRDM penetrations inside the shroud and as such is not accessible for volumetric examination as required by IWB-2500.

   Volumetric examination of the bottom head peel segment to disc circumferential weld (RPVC-5) is restricted from inside the vessel by the location of adjacent in-core instrumentation penetrations. Volumetric examination from the outside of the vessel is restricted by in-core instrumentation conduits which prevent sufficient scanning path for volumetric examination.

Relief Request 7

1. Components for Which Relief is Requested

   (a) Name: Shell-to-Head Circumferential and Longitudinal Welds (PZRC-5 and PZRL-4)
   (b) Function: Pressurizer
   (c) ASME Section XI Code Class 1

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 Table IWB-2500-1, Items B2.10, B2.11, and B2.12 - Volumetric examination of the upper circumferential and longitudinal shell-to-head welds.

3. Alternate Examinations

   Indirect visual examination for evidence of leakage during system hydrostatic tests will be performed for welds PZRC-5 and PZRL-4. Examination of accessible portions of the bottom circumferential and longitudinal shell-to-head welds (PZRC-1 and PZRL-1) will be performed as required by IWB-2500.

4. Basis for Requesting Relief and Alternate Examination

   The upper circumferential (PZRC-5) and longitundinal (PZRL-4) welds are enclosed in a biological and missile shield and are therefore inaccessible for volumetric examination as required by IWB-2500.

Relief Request 8

1. Components for Which Relief is Requested

   (a) Name: Circumferential, Tubesheet-to-Shell, and Nozzel-to-Vessel Welds, and Nozzle Inside Radius Section
   (b) Function: Regenerative Heat Exchanger (Tube and Shell Sides)
   (c) ASME Section XI Code Class 1

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 Table IWB-2500-1, Items B2.50, B2.51, B2.61, B3.150, and B3.160 - Volumetric examinations of circumferential, tubesheet-to-shell, and nozzle-to-vessel welds, and nozzle inside radiused sections.

3. Alternate Examination

   All component parts and welds associated with the Regenerative Heat Exchanger will be visually examined during hydrostatic testing per IWB-2500.

4. Basis for Requesting Relief and Alternate Examination

   The total personnel exposure that would be involved in performing the inspections required by the Code, based on the measured values of 25-rem/hr. at the tubesheet end of the heat exchanger and 10-rem/hr. at the opposite end, is estimated at 1100 Rem. This estimate includes the time required for health physics surveys and monitoring, erecting and removing scaffolding, emplacing and removing shielding, removing and replacing insulation, performing the inspections, cleaning the welds, and general clean up.[1]

   No significant reduction in exposure rate is anticipated as a result of flushing or decay because the radioactive material is entrapped in crevices or deposits not amenable to flushing and has a long half-life. Because of the high fields, a modification is planned to install permanent shielding to permit work in the area. The permanent shielding will have leak collection lines that will support visual examinations for leakage from the Regenerative Heat Exchangers. The leak collection system will provide a positive method of ensuring that the Regenerative Heat Exchanger is operating safely.

(1) Refer to Con Ed's march, 1982 response to Question #4 of the NRC's February 22, 1982 letter concerning the Inservice Inspection Program (Docket 50-247).

Relief Request 9

1. Components for Which Relief is Requested

   (a) Name: Nozzle Inside Radius Section
   (b) Function: Pressurizer
   (c) ASME Section XI Code Class 1

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 table IWB-2500-1, Item B3.120 - Volumetric examination of all nozzle inside radiused sections.

3. Alternate Examinations

   All nozzles will be examined during system hydrostatic tests as per IWB-2500.

4. Basis for Requesting Relief and Alternate Examination

   The nozzles on the pressurizer are cast with the vessel heads. The as-cast surface of the heads, combined with the geometry of this area effectively preclude ultrasonic examination of the nozzle inner radii.

   The geometry and size of the nozzles are such that a radiographic examination is not feasible. Specifically, the radiographic test film cannot be situated properly from the I.D. due to a lack of interior structure to work from. Placement of the source on the I.D. will not allow proper film to source distance, resulting in geometric unsharpness.

   Additionally, with the manway slightly lifted from the manway flange, fields exterior to the pressurizer in the vicinity of the manway are 3-5 rem/hr. Although the fields within the pressurizer have not been specifically measured, they are considerably higher and preclude the placement of radiographic film on the interior of the pressurizer. For practical reasons, the high fields also preclude a visual examination of the nozzle inside radius surface and, because the nozzles are clad on their surface, a visual examination would be of no significant value.

Relief Request 10

1. Components for Which Relief is Requested

   (a) Name: Nozzle Inside Radius Section
   (b) Function: Steam Generators (Primary side)
   (c) ASME Section XI Code Class 1

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 Table IWB-2500-1, Item B3.140 - Volumetric examination of all nozzle inside radiused sections.

3. Alternate Examination

   In lieu of the above examination requirements, a visual examination for evidence of leakage during system hydrostatic tests will be performed as required by IWB-2500.

4. Basis for Requesting Relief and Alternate Examination

   The nozzles on the generators are cast with the vessel heads. The as-cast surface of the heads, combined with the geometry of this area effectively preclude ultrasonic examination of the nozzle inner radii.

   Although the inner radii of the steam generator nozzles are potentially accessible for a surface examination, such examinations are unwarranted because the cladding precludes surface examination of the base metal and this surface is a rough, manually deposited cladding which does not readily permit meaningful surface examinations.

   The radiation levels in the interior vicinities of the nozzles have been determined to range from 25 to 40 rem/hr. These levels make a volumetric examination by radiography impracticable.

Relief Request 11

1. Components for Which Relief is Requested

   (a) Name: Nozzle-to-Safe End Welds
   (b) Function: Reactor Vessel
   (c) ASME Section XI Code Class 1

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 Table IWB-2500-1, Item B5.10 - surface examination of nozzle-to-safe end welds.

3. Alternate Examinations

   There are dissimilar metal welds between the carbon steel nozzle forgings and the stainless steel transition (spool) pieces of the reactor coolant piping. These welds will be volumetrically examined during the inspection interval from the inside diameter with the automated reactor vessel inspection tool. Indirect visual examination for evidence of leakage during the performance of system hydrostatic tests will be performed as per IWB-2500.

4. Basis for Requesting Relief and Alternate Examination

   The only access to the reactor nozzle safe ends from the outside surface is through removable plugs in the primary shield. These plugs are located above the nozzle safe ends and are removable through the refueling cavity floor. With the plugs removed, the top insulated surfaces (approximately 25%) of the nozzle safe-ends are visible, however, the fixed insulation, designed as non-removable, precludes surface examination.

   Insulation modifications to permit surface examination, even for a limited 25% of the weld area, are considered impractical and/or unnecessary for the following reasons: 1) a two to three rem/hr. exposure field on contact, 2) extremely confined work area, 3) restrictive clothing required for anti-contamination, 4) the minimal value derived from such an inspection.

Relief Request 12

1. Components for Which Relief is Requested

   (a) Name: Nozzle-to-Safe End Welds
   (b) Function: Pressurizer and Steam Generators
   (c) ASME Section XI Code Class 1

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI Table IWB-2500-1, Items B5.40 and B5.70 - Volumetric examination of nozzle-to-safe end welds.

3. Alternate Examination

   Surface examinations will be performed on all nozzle-to-safe end welds per Code requirements. Partial volumetric examination by ultrasonic methods will be performed on all welds and shall be consistent with that performed during the pre-service inspection and the first inspection interval. Areas not examined will be identified.

4. Basis for Requesting Relief and Alternate Examinations

   The 100% volumetric examination requirements for the nozzle-to-safe end weld surfaces of the pressurizer and steam generators are limited by the following:

   - The contours of the nozzle-to-safe end weld surfaces. Specifically, the as-fabricated contours of these welds are rounded with relatively high crowns of non-uniform heights.
   - The as-cast geometry of the nozzles with their vessel's head.
   - Nozzle reinforcement welds.
   - Adjacent welds on thermal sleeves and rolled-in liners.
   - The configuration of elbows connected to safe ends.

   The combination of weld crown contours, the as-cast geometry of nozzles, nozzle reinforcement welds, adjacent welds, and elbows preclude volumetric examination of nozzle-to-safe end welds per Code requirements.

Relief Request 13

1. Components for Which Relief is Requested

   (a) Name: 14" Motor Operated Gate Valves 730 and 731
   (b) Function: Residual Heat Removal System
   (c) ASME Section XI Code Class 1

2. Reference Code Requirements That Have Been Determined to be Impractical

   ASME Section XI 80/w81 Table IWB-2500, Item B12.50, category B-M-2, Visual examination of internal pressure boundary surfaces.

3. Alternate Examinations

   Subsequent to each refueling and prior to plant operation, the valves shall be visually examined for leakage during performance of the Reactor Coolant System hydrostatic test. In addition, the valves shall be leak tested per IWV-3240 during each refueling.

   A visual examination of the internal pressure boundary surface will be accomplished to the extent permitted by valve disassembly in the event the valve is opened for required maintenance.

4. Basis for Requesting Relief and Alternate Examinations

   Valves 730 and 731 are identical 14" motor operated gate valves, one of which would normally be disassembled for examination of the internal pressure boundary surfaces. Valve 731 is the first isolation valve off the Reactor Coolant System. Access to the valve internals is precluded by high radiation fields and the need to maintain a water level in the refueling canal to shield personnel from the lower reactor internals. Although the fields in the area of valve 730 are significantly lower, disassembly of either valve at this time is considered to be unwarranted. Valve 730 is the second isolation valve. Opening this valve for inspection would result in only one isolation valve (731) between the opened valve (730) and the shielding water in the refueling canal. Maintaining only single valve isolation to support a visual examination is considered to be imprudent in this case. Although valve 731 has proven to be leak tight during various tests, if leakage did develop through this valve there exists the potential of lowering the refueling canal water level, resulting in personnel exposures from the uncovering of the reactor lower internals. The intent of the

Relief Request 13 (Continued)

Code specified internal visual examinations is to verify continued integrity of the valve pressure boundary. Valves 730 and 731 are visually examined for leakage after each refueling outage during the hydrostatic tests of the Reactor Coolant system (RCS) while subjected to full RCS pressure. The integrity of these valves' pressure boundary parts have therefore been well demonstrated by these continuing hydrostatic tests. Additionally, the valves have been added to the ASME Section XI Subsection IWV Inservice Testing Program and have been satisfactorily leak tested. These valves have also operated satisfactorily when required during plant operation since initial plant operation. The combination of hydrostatic tests, leak tests and satisfactory operation is sufficient to demonstrate continuing valve pressure boundary integrity without the need for valve disassembly. The valves will be visually examined in the event that they are disassembled for maintenance. Careful consideration of these overall factors indicates that it is in the best interest of plant operation and personnel safety to avoid valve disassembly until required.

Relief Request 14

1. Components for Which Relief is Requested

   (a) Name: Shell and Head Circumferential Welds
   (b) Function: Seal Water Return Filter
   (c) ASME Section XI Code Class 2

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 Table IWC-2500-1, Items C1.10 and C1.20 - Volumetric examination of shell and head circumferential welds.

3. Alternate Examinations

   Surface and VT-2 visual examinations will be performed in lieu of the volumetric examination per IWA-2220 and IWA-2212, respectively.

4. Basis for Requesting Relief and Alternate Examinations

   The material thickness (.187 inch) utilized for the construction of the seal water return filter is such that meaningful results could not be expected with ultrasonic examination as required by IWC-2500.

Relief Request 15

1. Components for Which Relief is Requested

   (a) Name: Shell and Head Circumferential Welds
   (b) Function: Seal Water Heat Exchanger
   (c) ASME Section XI Code Class 2

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 Table IWC-2500-1, Items C1.10 and C1.20 - Volumetric examination of shell and head circumferential welds.

3. Alternate Examinations

   Surface and VT-2 visual examinations will be performed in lieu of the volumetric examination per IWA-2220 and IWA-2212, respectively.

4. Basis for Requesting Relief and Alternate Examinations

   The material thickness (.187 inch) utilized for the construction of the seal water heat exchanger is such that meaningful results could not be expected with ultrasonic examination as required by IWC-2500.

Relief Request 16

1. Components for Which Relief is Requested

   (a) Name: Shell and Head Circumferential Welds, Reinforcing Plate Welds to Nozzle and Vessel, and Integrally Welded Attachments
   (b) Function: Residual Heat Exchangers (2) (Tube Side)
   (c) ASME Section XI Code Class 2

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 Table IWC-2500-1, Items C1.10, C1.20, C2.31, and C3.10 - Volumetric examinations of shell and head circumferential welds. Surface examinations of integrally welded attachments and reinforcing plate welds to nozzle and vessel.

3. Alternate Examinations

   In lieu of the above examination requirements, the RHR heat exchangers will be visually examined for leakage during the system hydrostatic test.

4. Basis for Requesting Relief and Alternate Examinations

   Access for examination of the shell and head circumferential welds, reinforcing plate welds to nozzle and vessel and integrally welded attachments is precluded by a combination of insulation design and high radiation fields. Specifically, the insulation was not designed for removal and replacement to support examinations. The Residual Heat Removal (RHR) heat exchangers are vertically mounted. The insulation of the bottom head is designed as essentially one unit supported by the shaping of the insulation around the inlet and outlet piping. Removing the portion of the insulation required for examination access will result in removing vertical support for the insulation on the head. Carefully controlled removal of the insulation will require erection of scaffolding and significant work activity near the head where radiation fields are in the order of 30-35 rem/hr. The effort to erect scaffolding, remove the insulation, prepare surfaces for examination, conduct the examinations, replace the insulation, and disassemble the scaffolding is considered unwarranted in view of the high fields where these activities will take place. Considering the high fields, the visual examination during hydrostatic testing is sufficient to demonstrate continuing integrity of the RHR heat exchangers.

Relief Request 17

1. Components for Which Relief is Requested

   (a) Name: Line segments identified below
   (b) Function: Containment Spray
   (c) ASME Section XI Code Class 2

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 IWC-5222 - The requirement for the system hydrostatic test pressure to be 1.10 times the system design pressure.

3. Alternate Examinations

   The line segment identified below shall be visually examined during an inservice test of Containment Spray Pump No. 21, during which the line segment will be subjected to pump discharge pressure.

Line No.	From Valve	To Valve
51	867A	866A and 866B

4. Basis for Requesting Relief and Alternate Examinations

   Check valve 867A precludes pressurization of this line segment from upstream of valve 867A. The design pressure of the line upstream of valves 866A and 866B precludes pressurizing this line segment to 1.10 times it's design pressure. The line segment will therefore be visually examined during an in-service test of Containment Spray Pump No. 21, during which the line segment will be subjected to pump discharge pressure.

Relief Request 18

1. Components for Which Relief is Requested

   (a) Name: Auxiliary Cooling System Supply and Discharge Headers
   (b) Function: Auxiliary Cooling Water
   (c) ASME Section XI Code Class 3

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 IWC-5222 regarding system hydrostatic test pressures.

3. Alternate Examinations

   The Auxiliary Cooling System supply header and discharge header shall be tested using an inservice test at nominal operating pressure.

4. Basis for Requesting Relief and Alternate Examinations

   The Auxiliary Cooling System removes heat from various components in all modes of plant operation. Although any redundant component in the system can, and shall be isolated, tested and repaired, if necessary, without affecting plant safety, the supply and discharge headers, because they are part of a non-redundant single loop system, cannot be isolated long enough for testing. There is no time in the life of the plant when these lines can readily be removed from service for the period of time required to perform tests and make repairs, if required.

   For example, if repairs were required in the discharge header subsequent to pressure tests and the repair area was located in a pipe tunnel where accessibility is very restricted, the total time required to isolate the header, pressure test it, repair it, retest it, and restore it to service would be prolonged such that design temperature limits of the Spent Fuel Pool may be exceeded. The potential for such a situation will be minimized by substituting inservice tests at nominal operating pressure for hydrostatic tests.

Relief Request 19

1. Components for Which Relief is Requested

   (a) Name: Open ended portions of the Service Water System suction lines up to first shutoff valves
   (b) Function: Service Water
   (c) ASME Secton XI Code Class 3

2. Reference Code Requirements That Have Been Determined to be Impractical

   The 80/w81 provisions do not clarify the criteria to be used for hydrostatic testing Class 3 components which take suction from a river.

3. Alternate Provisions

   The provisions of Section IX 80/w81 IWD-5223(d) shall be applied to open ended portions of Service Water suction lines up to their first shutoff valves.

4. Basis for Requesting Relief and Alternate Examinations

   In view of the fact that the 80/w81 provisions do not clarify the criteria to be used for Class 3 components which take suction from a river, the application of the criteria of Paragraph IWD-5223(d) to the open ended portions of the Service Water suction lines up to their first shutoff valves will establish the criteria to be used in this case.

Relief Request 20

1. Components for Which Relief is Requested

   (a) Name: All components subjected to the hydrostatic test provisions of IWA-5000.
   (b) Function: Various
   (c) AMSE Section XI Code Class 1, 2 and 3.

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 IWA-5211(d) regarding the performance of hydrostatic tests during plant shutdown only.

3. Alternate Provisions

   System hydrostatic tests may be conducted either while the plant is in operation or shutdown.

4. Basis for Requesting Relief and Alternate Examinations

   The provisions of IWA-5211(d) stipulate that hydrostatic tests can be performed during plant shutdown only. Greater scheduling flexibility will result if hydrostatic tests are permitted to be performed during plant operation.

   Performing hydrostatic tests during plant operation will also provide a reduction in challenges to piping systems. Generally, the pressure variation between atmospheric pressure and test pressure will produce a greater increase in fatigue usage factor and larger thermal stresses than the pressure variation between operating pressure and test pressure. Adherence to Plant Technical Specification requirements will assure proper plant operation during the performance of system hydrostatic tests.

Relief Request 21

1. Components for Which Relief is Requested

   (a) Name: Line segments of line Nos. 16 and 56 as identified below.

   (b) Function: Safety Injection System

   (c) ASME Section XI Code Class 2

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 IWC-5222 which specify that the system hydrostatic test pressure shall be at least 1.10 times the system design pressure.

3. Alternate Examinations

   The line segments identified below shall be visually examined for leakage during an inservice test per Section XI 80/w81, paragraph IWA-5211(c).

Line No.	From Valve	To Valve
16	851 B	852 B
56	851 A	852 A

4. Basis for Requesting Relief and Alternative Examinations

   Check valves 852 A and 852 B preclude pressurization of these line segments from the piping downstream of 852 A and 852 B. The piping upstream of valves 852 A and 852 B cannot be isolated from the Safety Injection pump discharge and suction lines. Therefore, line segments between 851 B - 852 B and 851 A - 852 A can only be pressurized from the pump side to maximum pump discharge pressure. A visual examination during an inservice test at maximum pump discharge pressure is considered sufficient to demonstrate continued pressure boundary integrity. The test pressure during the inservice test is anticipated to be about 1550 psig, close to the test pressure of 1732 psig which would otherwise be required based on 80/w81 provisions.

Relief Request 22

1. Components for Which Relief is Requested

   (a) Name: Service Water System - Diesel Generator Coolers

   (b) Function: Heat Removal from Diesel Generator Oil

   (c) ASME Section XI Code Class 3

2. Reference Code Requirements That Have Been Determined to be Impractical

   ASME Section XI 80/w81 IWD-5000 which specifies that the system hydrostatic test pressure shall be at least 1.10 times the system design pressure.

3. Alternate Examinations

   The Diesel Generator Coolers will be tested at 142 psi in lieu of 165 psig (1.10 times Service Water System design pressure) as specified by IWD-5000.

4. Basis for Requesting Relief and Alternate Examinations

   In accordance with the manufacturer's operating manual, operation of the equipment is precluded under conditions which exceed component name plate data. In the case of the coolers, maximum permissible pressure is limited to 150 psig. Discussion with the supplier indicated that if this pressure was exceeded, the equipment would potentially be degraded.

   To preclude potential equipment degradation, the diesel cooler pressure test will be established at 142 psig (6% less than 150 psig) with the test relief valves set at 150 psig to provide for a test operating range.

   The 142 psig test is more than sufficient to demonstrate component integrity because it significantly exceeds normal operating pressure and also exceeds maximum possible pressure - the Service Water pump shut off head. Specifically, the normal operating pressure is only 60-80 psig and pump shut off head is 137 psig.

Relief Request 23

1. Components for Which Relief is Requested

   (a) Name: Steam Generators (Secondary Side) and connecting non-isolable main steam, blowdown and feedwater piping and valves.
   (b) Function: Steam generation, blowdown and feedwater inlets.
   (c) ASME Section XI Code Class 2

2. Reference Code Requirements That Have Been Determined to be Impractical

   Provisions of Section XI 80/w81 IWC-5222 which stipulate that the system hydrostatic test pressure is to be 1.25 times the system design pressure for systems with a design temperature above 200°F (93°C).

3. Alternate Examinations

   Each steam generator and connecting non-isolable piping shall be tested in accordance with 80/w81 IWB-5222 which is based on operating pressure in lieu of design pressure.

4. Basis for Requesting Relief and Alternate Examinations

   The steam generators (primary and secondary side) were designed in accordance with the requirements of ASME B&PV Code Section III Class A, (1965 Edition), to the same requirements as the Indian Point Unit 2 Reactor Vessel and Pressurizer. Accordingly, the steam generator secondary side and connecting non-isolable piping classification shall be upgraded, for hydrostatic test purposes only, consistent with its construction to the classification of the Reactor Vessel and Pressurizer. The provisions of IWB-5222 in lieu of IWC-5222 will therefore apply.