INDIAN POINT NUCLEAR GENERATING UNIT NO. 2 (Docket No. 50-247)

INSERVICE INSPECTION AND TESTING PROGRAM

Supplement No. 3

Consolidated Edison Company
of New York, Inc.

February, 1979

Supplement No. 3

Instruction Sheet

Remove the old pages and insert the new pages into the Indian Point Unit No. 2 Inservice Inspection and Testing Program as follows:

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pgs. 1 through 7	pgs. 1 through 8
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Enclosure 5 title page	Enclosure 5 title page
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Indian Point Nuclear Generating Unit No. 2

Inservice Inspection and Testing Program

INTRODUCTION

The inservice inspection and testing program described herein has been developed as required by Section 50.55a of 10 CFR Part 50 as amended February 1976.

APPALICABILITY

This inservice inspection and testing program is applicable to the:

a. Inservice inspection of Quality Group A, B and C systems and components (and their supports) for the unit's second forty month inspection period of the first ten year inspection interval (November 1, 1977 through February 28, 1981).

b. Inservice testing of Quality Group A, B and C pumps and valves for the unit's third twenty month inspection period (November 1, 1977 through June 30, 1979) and fourth twenty month inspection period (July 1, 1979 through February 28, 1981) of the first ten year inspection internal. 3

APPLICABLE CODES

In accordance with Section 50.55a(g) of 10CFR Part 50, the applicable ASME B&PV Code Section XI, Division 1, edition and addenda for the inspection periods specified above are the:

a. 1974 edition with addenda through Summer 1975 for the inservice inspection of Quality Group A, B and C systems and components (and their supports).

b. 1974 edition with addenda through Summer 1975 for the inservice testing of Quality Group A, B and C pumps and valves. 1

SYSTEM AND COMPONENT CLASSIFICATION

Quality Group criteria for the classification of systems and components of Indian Point Unit No. 2 are consistent with NRC Regulatory Guide 1.26, Revision 3.

PROGRAM DESCRIPTION

Enclosures 1, 2, and 3 identify specific components and parts to be examined in accordance with subsections IWB, IWC and IWD for Quality Group A, B and C examinations, respectively. Enclosure 4 provides information concerning the withdrawal of materials irradiation surveillance specimens from the Indian Point Unit No. 2 reactor vessel. Enclosures 5 and 6 identify specific Quality Group A, B and C pumps and valves to be tested in accordance with subsections IWP and IWV, respectively. 1

Enclosures for the inservice inspection of Quality Group A, B, and C components identify the components to be inspected, the component

Quality Group classification, the applicable code to which the component was fabricated and the method of examination. Where these inspection requirements have been determined to be impractical, the enclosures identify the applicable code requirement, justification for the exception taken, and where practical, the inspection method to be used as an alternative.

Enclosure 5 provides a listing of the Quality Group A, B, and C pumps subject to the inservice testing requirements of subsection IWP. The pumps are those provided with an emergency power source which are relied upon to fulfill the safety-related function of safely shutting down the reactor or of mitigating the consequences of a postulated accident. The enclosure identifies the pumps to be tested, pump Quality Group classification, parameters to be measured or observed, and test intervals. Where these inspection requirements have been determined to be impractical, the enclosure identifies the applicable code requirement, justification for the exception taken, and where practical, the inspection method to be used as an alternative.

Similarly, Enclosure 6 provides a listing of the Quality Group A, B and C valves subject to the inservice testing requirements of subsection IWV. The enclosure identifies the valves to be tested, the Section XI category as defined by IWV-2000, and test frequencies. Exception to the Section XI specified testing requirements is taken in cases where these requirements have been determined to be impractical. In such instances, the enclosure identifies the applicable code requirement, justification for the exception taken, and where practical, the inspection method to be used as an alternative. This valve testing program has been reviewed to ensure that testing of valves at the intervals specified will not place the plant in an unsafe condition. 1

The inservice inspection and testing program outlined in the attached enclosures has been developed following a design review. Should certain ASME B&PV Code Section XI 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. 3

Access Considerations

Indian Point Unit No. 2 was designed and constructed prior to the inception of the ASME B&PV Code Section XI. Consequently, some examinations may be limited due to considerations of design, access or materials of construction. Radiation levels in certain areas or of certain components may also restrict the access to perform examinations or tests. In such instances, the examinations or tests will be performed to the extent practical.

Acceptance Standards

Evaluation of indications detected in Quality Group A, B and C components, exceeding specified threshold levels for evaluation, during inservice examinations, will be made using the acceptance standards for materials and welds specified in the code under which the component was fabricated. Alternatively, the acceptance standards of the

applicable Section XI edition and addenda or other analyses determined suitable by Con Edison Engineering may be used.

Repair Procedures

When evaluation of indications detected during inservice examinations of Quality Group A, B and C components indicate the need for repair, procedures shall be developed in accordance with the applicable Section XI edition and addenda or, alternatively, in accordance with the Con Edison Quality Assurance Program[1] in effect at time of repair.

Fabrication Codes

Codes referenced as being applicable to the fabrication of components are:

III A	ASME B&PV Code, Section III, Class A Nuclear Vessels.
III C	ASME B&PV Code, Section III, Class C Nuclear Vessels.
VIII	ASME B&PV Code, Section VIII, Pressure Vessels.
B31.1	USA Standard USAS B31.1 Code for Pressure Piping.
B16.5	USA Standard USAS B16.5 Steel Pipe Flanges, Flanged Valves and Fittings.
AWWA, D100-65	American Water Works Association D100-65.

Ultrasonic Examination

When required, ultrasonic examination will be performed, to the extent practical, in accordance with the applicable requirements of ASME B&PV Code Sections V or XI with the following stipulation in lieu of code requirements:

(1) Ultrasonic examination indications detected in piping and vessel welds which produce a response greater than 75% of the reference level shall be recorded.

(2) Ultrasonic examination indications detected in piping and vessel welds which produce a response greater than 100% of the reference level shall be investigated to the extent that the operator can determine the shape, identity and location of the indication for evaluation with respect to the applicable acceptance criteria.

The ultrasonic techniques and procedures to be employed for the inservice examination of Quality Group A and B piping and pressure vessel welds shall be technically equivalent to the requirements of the Code Section V or XI rules. Techniques and procedures in all cases may not necessarily adhere to all the specific requirements of the code rules. 3

Nondestructive examination, equipment, procedures and techniques, already established and implemented to support prior plant Technical Specification commitments to ASME B&PV Code Section XI, need not

[1] The latest revision to the Con Edison Quality Assurance Program dated June 3, 1977, was submitted to NRC by letter dated June 7, 1977.

necessarily be revised unless Con Edison Engineering or Quality Assurance determines that a necessary and substantial benefit would result from such revision.

Ultrasonic examination techniques which are referenced or included in editions and addenda of Code Sections V or XI subsequent to the editions and addenda applicable to this inspection period may be used.

Where calibration block material specification equivalence is required, material specification equivalence shall be established by "P" number grouping in lieu of the requirements of paragraph I-3121 or other similar code requirements. "P" numbers are given in ASME B&PV Code Section VIII.

Delays due to malfunctions of the automated reactor vessel inspection tool, although infrequent, have been experienced. When malfunctions occur, timely repairs will be initiated. However, during vessel inspections which do not require removal of reactor internals and thermal shield, if the malfunctions are anticipated to preclude completion of the inspections within twenty four hours beyond the expected forty eight hours required, activities will be discontinued and the remaining examinations rescheduled for the subsequent inspection period.

Rescheduling of planned examinations will not significantly alter the overall reactor vessel inspection program since it would only delay the planned inspections while still assuring that all reactor vessel inspections are performed within the ten year inspection interval as required by Section XI. The resultant reactor vessel inspection sequence, although differing from the exact schedule proposed by Section XI, will be consistent with the intent of Section XI; that is, to provide meaningful inspections without undue delay in plant operation.

Item/Area Identification and Datum Reference Markings

At the time of construction of Indian Point Unit No. 2, application of item/area identification and datum reference markings was not required. Application of such markings to each and every item or area subject to examination is deemed impractical for an operating plant. In many instances, no physical access is available to permit such marking. In other instances, exposure levels prohibit their application. Datum points will however be established in the event that recordable indications are to be reported. Such datum points shall either be marked on the component(s) or have their location(s) adequately described such that subsequent relocation can be achieved within 0.5 inches. Accordingly, exception is taken to the marking requirements of Appendix I, I-6230 and all such similar requirements for the marking of piping, vessels, pumps and valves. 3

System Pressure Tests

1. Requirements for the visual examination of Quality Group A systems and components for evidence of leakage during the performance of (a) a system leakage test prior to start-up following each reactor refueling outage and (b) a system hydrostatic pressure test at or near the end of each inspection interval as identified

by IWB-5200, are impractical on those portions of Quality Group A systEms which are contained between two check valves or two normally closed valves where pressure applied to the reactor coolant system will be retained at the first valve in the line. Portions of systems affected by this limitation are:

(a) RHR suction line between MOV-731 and MOV-730.

(b) RCS loop drains between normally closed valves 505A & B, 508A & B, 511A & B, and 515A & B.

(c) Pressurizer auxiliary spray line (CVCS) between check valves 211 and 374.

(d) Charging line to RCS loop 21 cold leg between check valves 210B and 374.

(e) Charging line to RCS loop 22 hot leg between check valves 210A and 374.

(f) Seal injection lines between check valves 251 A, B, C & D and 251E, F, G & H.

2. Subsections IWB and IWC contain differing requirements for the hydrostatic testing of Quality Group A and B systems and components. The implementation of these requirements is impractical when the only means of pressurizing the Quality Group B system is through the Quality Group A system or when the boundary between the two systems is a check valve arranged for flow from the Quality Group B system to the Quality Group A system. Performance of hydrostatic tests as required by IWC-2412(a) and IWC-5000 is impractical where such limitations exist. Portions of Quality Group B systems affected by this limitation are identified below.

Visual examination for evidence of leakage will be conducted on these portions at pressures compatible with the pressure test requirements for the adjoining Quality Group A system, to the extent practical.

(a) R.C. pump seal bypass lines from the flow orifices to air operated valve 246.

(b) R.C. pump seal leak-off lines to manual valves 243A, B, C & D and 244A, B, C & D.

(c) R.C. pump seal injection lines from check valves 251E, F, G and H to manual valves 250A, B, C and D.

The potential for inadvertent overpressurization of the reactor coolant system precludes the advisability of pressurizing Quality Group B systems to considerably higher pressures than the adjacent Quality Group A system. Implementation of the hydrostatic test requirements of IWC-2412(a) and IWC-5000 on the CVCS system where

such potential exists is therefore considered impractical. The chemical and volume control charging, seal injection and letdown systems are in continuous operation during normal plant operation and are continuously monitored to ensure continued integrity and performance.

The pressure tests and associated visual examination requirements of IWC-2412(b) and IWC-5000 are impractical for the Quality Group B portions of the RHR system between motor operated valves 746 & 747 and check valves 838A, B, C & D. Flow direction check valves preclude pressurization from the reactor coolant system and pressurization using the RHR or recirculation pumps cannot be accomplished at the required pressures. These segments will be examined for evidence of leakage at pressures consistent with adjacent segments of the RHR system.

Hydrostatic testing of the RHR system is currently performed in accordance with Technical Specification requirements. The pressures specified for RHR system hydrostatic testing provide adequate margin above the highest pressures expected within the system after a design basis accident. Hydrostatic tests of the RHR system will continue to be performed in accordance with section 4.4 of the plant Technical Specifications.

The pressure test and visual examination requirements of IWC-2412(a) and IWC-5000 are unnecessary with respect to the Accumulators and the Boron Injection Tank. These vessels are maintained under nitrogen blanket overpressures during all modes of normal reactor operation and are continuously monitored to ensure continued integrity and performance.

The pressure test and visual examination requirements of IWC-2412(a) with respect to steam generator blowdown and blowdown sample lines are considered impractical as these lines can only be pressurized in conjunction with pressurization of the steam generator secondary side. Hydrostatic testing of these lines will be performed in conjunction with the steam generator secondary side at intervals specified by IWC-2412(b).

Quality Group B piping systems contained between containment isolation valves which cannot be pressure tested with adjoining systems will be tested in accordance with 10CFR Part 50, Appendix J, and unit technical specification requirements for containment isolation valves (Type C Testing).

3. The examination requirements for Quality Group C systems and components as presented in Enclosure 3 are in accordance with IWD-2410(c) which specifies that 100% of the components be examined as required by IWA-5240 and IWD-2600 either during system in-service testing or during normal plant operation. An additional requirement of IWD-2410(b) is the examination of Quality Group C systems and components for evidence of leakage during the performance of a system hydrostatic pressure test in accordance with IWD-5000. Although the system hydrostatic pressure tests may be deferred until the end of the ten year inspection interval, it

should be noted that these system pressure tests are impractical in those systems such as component cooling, service water, spent fuel pit cooling and boric acid transfer and recirculation, which are typically in continuous operation during all modes of plant operation. The continuous functional operation serves to demonstrate the structural integrity and performance of these systems. Where access to this piping is available, visual examinations for evidence of leakage will be performed on these systems during normal plant operation to verify leak-tightness.

4. Portions of piping systems that cannot be pressurized or pressurized to the specified pressures, either through the reactor coolant system or by installed equipment, will not be pressurized unless provisions for connecting an external pressure source and adequate isolation capability currently exist.

5. Where overpressure protection is provided for normal plant operation, test pressures shall not exceed the limits or set points established for normal plant operation or the pressures specified by Section XI, whichever is less.

6. Where the hydrostatic test pressure and temperature requirements of Section XI may potentially degrade the operability or integrity of piping systems or components, the pressures and temperatures shall be revised appropriately.

Personnel Qualifications

Personnel performing nondestructive examination involving ultrasonic, radiographic, eddy current, magnetic particle or liquid penetrant techniques shall be qualified with a procedure prepared in accordance with SNT-TC-1A for the applicable examination technique and methods as required by IWA-2300. Other personnal, such as those performing visual examination for evidence of leakage during system pressure tests or who monitor contractor activities, are typically members of the onsite operating organization and as such are qualified as described in the Con Edison Quality Assurance Program in effect at time of inspection.

Authorized Inspector

As an alternate to requiring an Authorized Inspector to document, witness, verify, approve etc., inservice inspections, tests and repairs to Quality Group A, B and C systems and components, verification of the adequacy of these activities will be accomplished as described in the Con Edison Quality Assurance Program in effect at time of inspection, test or repair. This program provides for:

a. The review by Quality Assurance and Reliability of nondestructive examination techniques and methods as well as the qualifications of personnel performing nondestructive examinations.

b. A vendor qualification process.

c. Monitoring by the Quality Assurance Engineer (NPG) to assure compliance with approved procedures.

Additionally the Authorized Inspector will be utilized to verify the adequacy of repairs to all ASME B&PV Code Section III stamped pressure vessels. This approach is consistent with current New York State law which does not invoke Section XI of the ASME B&PV Code as part of it's boiler and pressure vessel requirements.

Reporting Requirements

The reporting requirements of IWA-6220(b) require filing of inservice inspection reports within ninety days after completion of the inservice inspection with the regulatory authority having jurisdiction at the plant site. Results of previous preservice and inservice examinations indicate the time required to compile, edit, review and evaluate the large quantities of documentation involved often exceeds the ninety day reporting requirement. Should scheduling conflicts develop, such that report submittal cannot be accomplished as required by IWA-6220(b), the NRC will be notified. The "Owner's Data Report" required by IWA-6220(e) shall not form a part of the report submittal required by IWA-6220(b).

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INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM - QUALITY GROUP A COMPONENTS

IWB 2600 ITEM NO.	IWB 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF
B1.1	B-A	Reactor Vessel	III A	Longitudinal and circumferential shell welds in core region	Volumetric	No - Note 1
B1.2	B-B	" "	"	Longitudinal and circumferential welds in shell (other than those of category B-A and B-C) and meridional and circumferential seam welds in bottom head and closure head (other than those of category B-C)	Volumetric	Yes - Note 2
B1.3	B-C	" "	"	Vessel to flange and head to flange circumferential welds	Volumetric	No - Note 3
B1.4	B-D	" "	"	Primary nozzle to vessel welds and nozzle inside radiused section	Volumetric	No - Note 4
B1.5	B-E	" "	"	Vessel penetrations, including control rod drive and instrumentation penetrations	Visual (IWA-5000)	No - Note 5
B1.6	B-F	" "	"	Nozzle to safe end welds	Volumetric	Yes - Note 6

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM - QUALITY GROUP A COMPONENTS

IWB 2500 ITEM NO.	IWB 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF
B1.7	B-G-1	Reactor Vessel	III A	Closure studs, in place	N/A	Yes - Note 7
B1.8	B-G-1	" "	"	Closure studs and nuts, when removed	Volumetric & Visual	Yes - Note 8
B1.9	B-G-1	" "	"	Ligaments between threaded stud holes	Volumetric	No - Note 9
B1.10	B-G-1	" "	"	Closure washers, bushings	Visual	No - Note 10
B1.11	B-G-2	" "	"	Pressure-retaining bolting	Visual	No - Note 11
B1.12	B-H	" "	"	Integrally welded vessel supports	N/A	No - Note 12
B1.13	B-I-1	" "	"	Closure head cladding	N/A	Yes - Note 13
B1.14	B-I-1	" "	"	Vessel cladding	N/A	Yes - Note 13
B1.15	B-N-1	" "	"	Vessel Interior	Visual	No
B1.16	B-N-2	" "	"	Interior attachments and core support structures	N/A	No - Note 14
B1.17	B-N-3	" "	"	Core support structures	Visual	No
B1.18	B-O	" "	"	Control rod drive housings	Volumetric	No - Note 15

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM - QUALITY GROUP A COMPONENTS

IWB 2500 ITEM NO.	IWB 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF
B1.19	B-P	Reactor Vessel	III A	Exempted components	Visual (IWA-5000)	No
B2.1	B-B	Pressurizer	III A	Longitudinal and circumferential welds	Volumetric	Yes - Notes 16, 17
B2.2	B-D	"	"	Nozzle to vessel welds and nozzle inside radiused section	N/A	No - Note 18
B2.3	B-E	"	"	Heater penetrations	Visual (IWA-5000)	No - Note 19
B2.4	B-F	"	"	Nozzle to safe end welds	Volumetric & Surface	Yes - Note 47, 50
B2.5	B-G-1	"	"	Pressure-retaining bolts & studs, in place	N/A	No - Note 20
B2.6	B-G-1	"	"	Pressure-retaining bolts & studs, when removed	N/A	No - Note 20
B2.7	B-G-1	"	"	Pressure-retaining bolting	N/A	No - Note 20
B2.8	B-H	"	"	Integrally welded vessel supports	Volumetric	No - Note 21
B2.9	B-I-2	"	"	Vessel cladding	N/A	Yes - Note 13

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM - QUALITY GROUP A COMPONENTS

IWB 2600 ITEM NO.	IWB 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF
B2.10	B-P	Pressurizer	III A	Exempted components	Visual (IWA-5000)	No
B2.11	B-G-2	"	"	Pressure-retaining bolting	Visual	No - Note 22
B3.1	B-B	Steam Generators (4) (Primary Side)	III A	Longitudinal and circumferential welds, including tubesheet to head or shell welds on the primary side	Volumetric	No - Notes 23, 24
B3.2	B-D	" "	"	Nozzle to head welds and nozzle inside radiused section on the primary side	N/A	No - Note 25
B3.3	B-F	" "	"	Nozzle to safe end welds	Volumetric & Surface	Yes - Note 50
B3.4	B-G-1	" "	"	Pressure-retaining bolts & studs, in place	N/A	No - Note 26
B3.5	B-G-1	" "	"	Pressure-retaining bolts & studs, when removed	N/A	No - Note 26
B3.6	B-G-1	" "	"	Pressure-retaining bolting	N/A	No - Note 26

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM - QUALITY GROUP A COMPONENTS

IWB 2500 ITEM NO.	IWB 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF	
B4.3	B-G-1	Piping Pressure Boundary	B31.1	Pressure-retaining bolts & studs, when removed	N/A	No - Note 30	
B4.4	B-G-1	"	"	Pressure-retaining bolting	N/A	No - Note 30	
B4.5	B-J	"	"	Circumferential & longitudinal pipe welds	Volumetric	Yes - Notes 33, 34, 35, 47, 48, 50	3
B4.6	B-J	"	"	Branch pipe connection welds exceeding 6 inch diameter	Volumetric	Yes - Note 36, 50	3
B4.7	B-J	"	"	Branch pipe connection welds 6 inch diameter and smaller	Surface	No	
B4.8	B-J	"	"	Socket welds	Surface	No	
B4.9	B-K-1	"	"	Integrally welded supports	Volumetric & Surface	Yes - Note 37, 49	3
B4.10	B-K-2	"	"	Support components	Visual	No	
B4.11	B-P	"	"	Exempted components	Visual (IWA-5000)	No	
B4.12	B-G-2	"	"	Pressure-retaining bolting	Visual	No - Note 38	

NOTES-QUALITY GROUP A COMPONENTS

1. Due to the Indian Point Unit No. 2 plant design, the welds in the reactor vessel are not accessible from the O.D. These welds will be volumetrically examined from the I.D. using remote mechanized techniques. Since the examination of these welds requires removal of the core internals and thermal shield, the examinations are scheduled near the end of the ten-year inspection interval.

2. The closure head peel segment to disc circumferential weld is completely enclosed within the pattern of the CRDM penetrations inside the shroud and as such is not accessible for volumetric examination as required by IWB-2600. The area will be visually examined for evidence of leakage during the performance of system hydrostatic tests. A small portion of the meridional welds in the closure head between the head flange and the CRDM shroud are accessible for ultrasonic examination from the O.D. when the head is removed from the vessel. Volumetric examination of the bottom head peel segment meridional welds and the bottom head peel segment to disc circumferential weld as required by IWB-2600 is restricted from inside the vessel by the location of adjacent in-core instrumentation penetrations. Visual examination for evidence of leakage during the performance of system hydrostatic tests will be performed from the area below the vessel to the extent practical as personnel exposure levels permit. Welds accessible to the remote inspection device will be volumetrically examined from the I.D.

3. The head-to-flange weld will be examined using manual ultrasonic techniques. This weld is accessible when the head is removed for refueling. Due to plant design, the vessel to flange weld in the reactor vessel is not accessible from the O.D. This weld will be volumetrically examined from the I.D. using remote mechanized techniques.

4. Due to plant design, the vessel nozzle welds are accessible only from the I.D. The inner radius of the outlet nozzles can be volumetrically examined, using remote mechanized techniques, without removing the core barrel. However, the core barrel must be removed to examine the inlet nozzles. For this reason, it is planned that the examination of the outlet nozzles be performed during the planned refueling outages near the end of the first and second forty month inspection periods and the inspection of the inlet nozzles near the end of the third forty month inspection period (end of ten-year inspection interval). ■3

5. The CRDM seal welds, CRDM and instrumentation penetrations and vent connection weld to the closure head, as well as the instrumentation penetration welds to the bottom

head are included in this category. The required number of penetrations, of each group of penetrations of comparable size and function will be visually examined for evidence of leakage during the performance of system pressure tests, to the extent practical, as permitted by personnel exposure levels.

6. 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. The examinations will conincide with the item 1.4 examinations of primary nozzle to vessel welds and nozzle inside radiused section (reactor vessel). Surface examination of these welds from the I.D. is impractical. Limited access to the O.D. of these welds is provided by removeable plugs in the primary shield above the nozzles. However, fixed non-removeable insulation about the nozzle/pipe circumference precludes examination by any method requiring physical surface contact. Exception is taken to performing a surface examination on these welds due to anticipated radiation levels and physical access. Indirect visual examination for evidence of leakage during the performance of system hydrostatic tests will be performed to the extent practical, considering personnel exposure levels. 3

7. The reactor vessel closure studs are removed during each refueling and there will be no need for examination in place as required by IWB-2600.

8. Volumetric examination of closure studs and nuts, when removed will be performed as required by IWB-2600. Exception is taken to performing surface examination of closure stud and nut threaded areas due to thread root geometry and the inability to insure complete removal of all traces of thread compound which could interfere with examination results. Visual examination will augment the volumetric examination.

9. This examination is applicable to the vessel flange only as the closure head flange holes are not threaded.

10. There are no closure bushings associated with the reactor vessel.

11. The only pressure retaining bolting smaller than two inch diameter associated with the reactor vessel is the conoseal bolting.

12. There are a total of four vessel-support pads welded to inlet and outlet nozzles on the Indian Point Unit No. 2 vessel. In accordance with category B-H of IWB-2500, the area to be examined is the welded connection between the nozzle and vessel shell. This examination is covered by item 1.4, primary nozzle to vessel welds and nozzle inside radiused section (reactor vessel).

13. Exception is taken to performing vessel cladding examinations. The cladding's intended function is to minimize corrosion products, not to provide structural support. The surface areas involved in these examinations are insignificant to the total clad surface area and are typically high exposure examinations. This position is consistent with the latest Section XI code addenda in which cladding examinations have been deleted.

14. This requirement is applicable to boiling water reactors only.

15. It is believed that a small number of peripheral control rod drive mechanisms are accessible through cut-outs in the CRDM shroud. Access, joint geometry and exposure levels permitting, the required number of welds in peripheral CRDM housings will be volumetrically examined to the extent practical.

16. The upper circumferential and longitudinal welds in the pressurizer are enclosed in a biological and missile shield and are therefore not accessible for volumetric examination as required by IWB-2600. Indirect visual examination for evidence of leakage during system hydrostatic tests will be performed to the extent practical. Examination of accessible portions of pressurizer longitudinal and circumferential welds below the operating deck will be performed as required by IWB-2600.

17. The pressurizer inclusion area is located in, and adjacent to the heat affected zone of longitudinal weld PZRL-2. Ultrasonic examination of this area will be performed during refueling outages. Should these examinations indicate no change in inclusion pattern after the second refueling outage examination, the examination requirements of the ASME Section XI code may subsequently be followed, provided this inclusion area is included as part of Category B-B examination requirements (Table IWB-2500). (Note: The second refueling outage examination has been completed with no change in inclusion pattern observed, future examinations will be performed as noted above). 3 3

18. The nozzles on the pressurizer are cast with the upper and lower heads; therefore, no inspections are required for this item number.

19. Pressurizer instrument and thermocouple penetrations are included in this category as well as heater penetrations. Visual examination for evidence of leakage will be performed during system pressure tests as required by IWB-2600.

20. There is no pressure retaining bolting 2 in. diameter or greater associated with the pressurizer.

21. The only integrally welded support associated with the pressurizer is the weld attaching the support skirt to the lower head. Volumetric examination will be performed as required by IWB-2600.

examinations cannot be performed as required by IWB-2600. These welds will be subject to visual examination for evidence of leakage during system hydrostatic tests. These welds are the only longitudinal welds in the reactor coolant loop piping.

34. The circumferential butt welds attaching the reactor coolant pipe to the 15 and 28 degree elbows in the cold legs are completely enclosed within the biological shield and are therefore not accessible for volumetric examination as required by IWB-2600. Indirect visual examination for evidence of leakage during the performance of system hydrostatic tests will be performed to the extent practical.

35. The circumferential butt welds attaching the stainless steel transition (spool) pieces on the reactor vessel nozzles to the reactor coolant piping will be examined from the nozzle bores using remote mechanized ultrasonic techniques. Access to approximately 25% of the outside surface circumference of these welds is provided through removable plugs in the biological shield; however, removable insulation has not been provided and no examinations are planned from the O.D. of these welds. Volumetric examination of these welds will be performed in conjunction with item 1.4 - Primary nozzle to vessel welds and nozzle inside radiused section (reactor vessel). 3

36. The geometric configuration of the weld surface may prevent ultrasonic examinations from being performed to the extent required by IWB-2600. Examinations will be performed to the extent practical from the pipe and nozzle surfaces adjacent to the weld. Surface examination of the weld may be performed, as necessary to supplement the volumetric examination.

37. The piping system integrally welded supports are attached to the pipe by fillet welds. The configuration of such welds is such that examinations cannot be performed to the extent required by IWB-2600 and only the base material of the pipe wall can be examined by ultrasonic techniques. Surface examination will be performed on integrally welded attachments to supplement the volumetric examination.

38. The only pressure retaining bolting less than two inch diameter in the piping boundary is at the flanged connections joining the upstream side of the three pressurizer safety valves to the relief line.

39. The only pressure retaining bolting associated with the reactor coolant pumps two inch diameter or greater is the main flange botting.

40. Volumetric examination of reactor coolant pump main flange bolting will be performed as required by IWB-2600. Exception is taken to the surface examination of threaded

areas due to thread root geometry and the inability to ensure the removal of all traces of thread lubricants which could interfere with examination results.

41. Volumetric and surface examinations of reactor coolant pump main flange bushings, threads and ligaments in base material is impractical due to component geometries and materials of construction. These component parts will be examined in accordance with the examination requirements of item 5.7 (reactor coolant pumps).

42. The reactor coolant pump supports consist of a cast foot welded to the pump casing (three supports per pump). There are no currently known techniques for ultrasonically examining these welds. Surface examination is substituted.

43. The reactor coolant pump casing is a weldment of two cast shells. At this time, there are no proven means of volumetrically examining the pump casing welds in service and therefore no examinations are planned. New NDE techniques will be evaluated for application on the pump casing welds and consideration given to performing volumetric examination as techniques become available.

44. Reactor coolant pump main flange bushings, threads and ligaments in base material are subject to these examination requirements (see note 41).

45. The only pressure retaining bolting associated with the reactor coolant pumps less than two inch diameter is the seal house bolting.

46. Each reactor coolant pump flywheel will be subject to an in-place visual and volumetric examination of the areas of higher stress concentration at the bore and keyway by the end of the first and second forty month inspection periods. A complete in place visual and volumetric examination of each flywheel will performed at or near the end of the ten-year inspection interval.

47. The arrangements and details of the piping systems and components are such that some examinations as required by IWB-2600 are limited due to geometric configuration of accessibility. Generally, these limitations exist at pipe to fitting welds, where examination can only be fully performed from one side; the fitting geometry limiting or even precluding examination from the opposite side. Welds having such restrictions will be examined to the extent practical. When not otherwise required, surface examinations may be utilized to augment volumetric examinations where practical. [3]

48. In instances where the location of pipe supports or hangers restrict the access available for the examination of pipe welds as required by IWB-2600, examinations will be performed to the extent practical.

49. Applicable construction codes required only visual examination of integral support welds. During inservice inspection, surface examination will be employed and indications previously accepted by visual examination may require further evaluation. Such indications will be evaluated in accordance with the as-constructed codes. Minor surface indications resulting from the original welding process which are determined not to be cracks or lack of fusion and not service connected will not require further action. These indications will not adversely affect overall weld integrity as evidenced by the satisfactory performance of these welds to date.

50. The piping system welds were constructed in accordance with, and satisfied the requirements of, the codes and specifications applicable at the time of construction. The integrity of these welds has been further verified by satisfactory performance during plant operation. The original fabrication codes and specifications did not require ultrasonic examination of welds. Conditions such as high and irregular weld crowns or rough surface finish may limit ultrasonic transducer contact to less than that required to completely scan the examination volume. In such instances, examinations will be performed to the extent practical consistent with these limitations. Such conditions shall be identified and documented in the examination results. 3

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM — QUALITY GROUP B COMPONENTS

IWC 2600 ITEM NO.	IWC 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF	
C1.1	C-A	Steam Generators (4) (Shell Side)	III C	Circumferential butt welds	Volumetric	Yes - Notes 1, 31	2,3
C1.2	C-B	" "	"	Nozzle to vessel welds	Volumetric	Yes - Notes 2, 31	2,3
C1.3	C-C	" "	"	Integrally welded supports	N/A	No - Note 3	
C1.4	C-D	" "	"	Pressure-retaining bolting	Visual & either Surface or Volumetric	Yes - Notes 4, 31	2,3
C1.1	C-A	Residual Heat Exchangers (2) (Tube Side)	III C	Circumferential butt welds	Volumetric	Yes - Notes 12, 31	2,3
C1.2	C-B	" "	"	Nozzle to vessel welds	Volumetric	Yes - Notes 5, 31	2
C1.3	C-C	" "	"	Integrally welded supports	Surface	Yes - Notes 6, 31	2,3
C1.4	C-D	" "	"	Pressure-retaining bolting	Visual & either Surface or Volumetric	Yes - Notes 7, 31	2,3
C1.1	C-A	Volume Control Tank (1)	III C	Circumferential butt welds	Volumetric	No - Notes 8, 19	

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM – QUALITY GROUP B COMPONENTS

IWC 2600 ITEM NO.	IWC 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF
C1.2	C-B	Volume Control Tank (1)	III C	Nozzle to vessel welds	Visual (IWA-5000)	No - Notes 9, 19
C1.3	C-C	" "	"	Integrally welded supports	Surface	Yes - Notes 10, 19, 32
C1.4	C-D	" "	"	Pressure-retaining bolting	Visual & either Surface or Volumetric	No - Notes 11, 19
C1.1	C-A	Seal Water Heat Exchanger (1) (Tube Side)	III C	Circumferential butt welds	Surface & Visual	Yes - Notes 13, 17
C1.2	C-B	" "	"	Nozzle to vessel welds	Visual (IWA-5000)	No - Notes 9, 14
C1.3	C-C	" "	"	Integrally welded supports	N/A	No - Note 3
C1.4	C-D	" "	"	Pressure-retaining bolting	N/A	No - Note 3
C1.1	C-A	Non-Regenerative Heat Exchanger(1) (Tube Side)	III C	Circumferential butt welds	Volumetric	No - Note 15
C1.2	C-B	" "	"	Nozzle to vessel welds	Visual (IWA-5000)	No - Notes 9, 16

3

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM – QUALITY GROUP B COMPONENTS

IWC 2600 ITEM NO.	IWC 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF	
C1.3	C-C	Non-Regenerative Heat Exchanger (1) (Tube Side)	III C	Integrally welded supports	N/A	No - Note 3	
C1.4	C-D	" "	"	Pressure-retaining bolting	N/A	No - Note 3	
C1.1	C-A	Reactor Coolant Filter (1)	III C	Circumferential butt welds	Surface & Visual	Yes - Notes 17, 18, 19	
C1.2	C-B	" "	"	Nozzle to vessel welds	Visual (IWA-5000)	No - Note 9	
C1.3	C-C	" "	"	Integrally welded supports	Surface	Yes - Notes 19, 20, 32	[redacted] 3
C1.4	C-D	" "	"	Pressure-retaining bolting	N/A	No - Note 3	
C1.1	C-A	Seal Water Injection Filters (2)	III C	Circumferential butt welds	Volumetric	Yes - Notes 19, 21,31	[redacted] 2
C1.2	C-B	" "	"	Nozzle to vessel welds	Visual (IWA-5000)	No - Note 9	
C1.3	C-C	" "	"	Integrally welded supports	Surface	Yes - Notes 19, 22,31,32	[redacted] 2,3
C1.4	C-D	" "	"	Pressure-retaining bolting	Visual & either Surface or Volumetric	Yes - Notes 19, 31	[redacted] 2

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM – QUALITY GROUP B COMPONENTS

IWC 2600 ITEM NO.	IWC 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF
C1.1	C-A	Seal Water Return Filter (1)	III C	Circumferential butt welds	Surface & Visual	Yes - Notes 17, 19, 23
C1.2	C-B	" "	"	Nozzle to vessel welds	Visual (IWA-5000)	No - Note 9
C1.3	C-C	" "	"	Integrally welded supports	Surface	Yes - Notes 19, 24, 32
C1.4	C-D	" "	"	Pressure-retaining bolting	Visual & either Surface or Volumetric	Yes - Note 19
C1.1	C-A	Boron Injection Tank (1)	VIII	Circumferential butt welds	Visual (IWA-5000)	No - Note 9
C1.2	C-B	" "	"	Nozzle to vessel welds	Visual (IWA-5000)	No - Note 9
C1.3	C-C	" "	"	Integrally welded supports	Visual (IWA-5000)	No - Note 9
C1.4	C-D	" "	"	Pressure-retaining bolting	Visual (IWA-5000)	No - Note 9
C1.1	C-A	Accumulators (4)	III C	Circumferential butt welds	Visual (IWA-5000)	No - Note 9
C1.2	C-B	" "	"	Nozzle to vessel welds	Visual (IWA-5000)	No - Note 9

3

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM — QUALITY GROUP B COMPONENTS

IWC 2600 ITEM NO.	IWC 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF	
C2.1	C-F, C-G	Piping Systems	B31.1	Circumferential butt welds	Volumetric	Yes - Notes 26, 27,28,31,33	2,3
C2.1	C-F, C-G	" "	"	Longitudinal weld joints in fittings	Volumetric	Yes - Notes 26, 27,28,29,31,33	2,3
C2.3	C-F, C-G	" "	"	Branch pipe to pipe weld joints	Volumetric	Yes - Notes 26, 27,31,33	2,3
C2.4	C-D	" "	"	Pressure-retaining bolting	Visual & either Surface or Volumetric	Yes - Notes 26, 31	2,3
C2.5	C-E-1	" "	"	Integrally welded supports	Surface	Yes - Notes 26, 31,32	2,3
C2.6	C-E-2	" "	"	Support components	Visual	Yes - Notes 26, 31	2,3
C3.1	C-F	Residual Heat Removal Pumps (2)	---	Pump casing welds	N/A	No - Note 3	
C3.2	C-D	" "	---	Pressure-retaining bolting	Visual & either Surface or Volumetric	Yes - Notes 19, 31	2
C3.3	C-E-1	" "	---	Integrally welded supports	N/A	No - Note 3	

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM – QUALITY GROUP B COMPONENTS

IWC 2600 ITEM NO.	IWC 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF
C3.2	C-D	Safety Injection Pumps (3)	---	Pressure-retaining bolting	Visual (IWA-5000	No - Note 9
C3.3	C-E-1	" "	---	Integrally welded supports	Visual (IWA-5000)	No - Note 9
C3.4	C-E-2	" "	---	Support components	Visual (IWA-5000)	No - Note 9
C3.1	C-G	Containment Spray Pumps (2)	---	Pump casing welds	Visual (IWA-5000)	No - Note 9
C3.2	C-D	" "	---	Pressure-retaining bolting	Visual (IWA-5000)	No - Note 9
C3.3	C-E-1	" "	---	Integrally welded supports	Visual (IWA-5000)	No - Note 9
C3.4	C-E-2	" "	---	Support components	Visual (IWA-5000)	No - Note 9
C4.1	C-F, C-G	Valves	---	Valve body welds	N/A	No - Note 3
C4.2	C-D	"	---	Pressure-retaining bolting	Visual & either Surface or Volumetric	Yes - Notes 26, 31
C4.3	C-E-1	"	---	Integrally welded supports	N/A	No - Note 3

2,3

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE INSPECTION PROGRAM — QUALITY GROUP B COMPONENTS

IWC 2600 ITEM NO.	IWC 2500 EXAM. CAT.	SYSTEM OR COMPONENT	FAB. CODE	AREA TO BE EXAMINED	EXAMINATION REQUIREMENT	SECTION XI CODE RELIEF
C1.4	C-E-2	Valves	---	Support components	Visual	Yes - Notes 26,31 2,3

31. Exception is taken to the examination area distribution requirements of IWC-2411 for the examinations required by IWC-2520. For components and piping systems in multiple streams of similar design, size and service, the required examinations may be performed on one component or stream rather than distributed among the components or streams. This approach will provide the equivalent degree of surveillance and is consistent with the requirements of the Summer, 1976 addenda and subsequent Section XI editions and addenda. 2

32. Applicable construction codes required only visual examination of integral support welds. During inservice inspection, surface examination will be employed and indications previously accepted by visual examination may require further evaluation. Such indications will be evaluated in accordance with the as-constructed codes. Minor surface indications resulting from the original welding process which are determined not to be cracks or lack of fusion and not service connected will not require further action. These indications will not adversely affect overall weld integrity as evidenced by the satisfactory performance of these welds to date.

33. The piping system welds were constructed in accordance with and satisfied the requirements of the codes and specifications applicable at the time of construction. The integrity of these welds have been further verified by satisfactory performance during plant operation. The original fabrication codes and specifications did not require ultrasonic examination of welds. Conditions such as high and irregular weld crowns or rough surface finish may limit ultrasonic transducer contact to less than that required to completely scan the examination volume. In such instances, examination will be performed to the extent practical consistent with these limitations. Such conditions shall be identified and documented in the examination results. 3

ENCLOSURE 5

Inservice Test Program
Quality Group A, B & C Pumps

Indian Point Unit No. 2
August, 1977

Supplement 3
Feb. 1979

Indian Point Nuclear Generating Unit No. 2

Inservice Test Program - Quality Group A, B & C Pumps

1.0 PUMPS SUBJECT TO THE TESTING REQUIREMENTS OF SUBSECTION IWP:

Safety Injection Pumps 21, 22 & 23
Residual Heat Removal Pumps 21 & 22
Containment Spray Pumps 21 & 22
Component Cooling Pumps 21, 22, & 23
Auxiliary Component Cooling Pumps 21 & 22
Service Water Pumps 21, 22, 23, 24, 25 & 26
Auxiliary Boiler Feedwater Pumps (Motor Driven) 21 & 23
Recirculation Pumps 21 & 22

2.0 TEST FREQUENCY DURING NORMAL PLANT OPERATION

2.1 All Pumps Except Component Cooling, Service Water and Recirculation Pumps:

The nominal pump test frequency as specified in subsection IWP requires pump testing once each month during normal plant operation. In a total of over 300 monthly tests completed during the last 5 1/2 years to satisfy Technical Specification requirements - approximately 25 tests per pump - the safety injection, residual heat removal, containment spray, auxiliary component cooling and motor driven auxiliary boiler feedwater pumps have demonstrated no significant change in operating characteristics. In light of this experience, exception is taken to performing monthly tests on these pumps with an alternate proposed two-month test interval scheduled. Based on the preceding test results, the two-month test interval will not significantly alter the operational readiness of these components and will decrease pump wear-out over the plant life time. The interval between successive tests shall not exceed two months (±25%). Accordingly, during normal plant operation, each pump shall be tested at least six times per year at approximately equal intervals.

2.2 Component Cooling and Service Water Pumps:

Unlike the pumps noted in 2.1 above, these pumps operate during normal plant operation, and therefore, periodic pump testing has never been required. When modifications to provide the necessary instrumentation are completed, data collection will proceed on a monthly schedule consistent with subsection IWP. The interval between successive tests shall not exceed one month (±25%). Accordingly, during normal plant operation, each pump shall be tested at least twelve times per year at approximately equal intervals.

3

2.3 Recirculation Pumps

The recirculation pumps are located inside containment and are not accessible for testing during normal plant operation. Consequently, exception is taken to testing these pumps at the frequency specified by subsection IWP. Testing of these pumps will be performed during refueling shutdowns. This is consistent with present Technical Specification requirements for recirculation pump surveillance testing.

3.0 TEST FREQUENCY DURING AND FOLLOWING SHUTDOWNS

3.1 All Pumps Except Safety Injection, Motor Driven Auxiliary Boiler Feedwater and Recirculation Pumps:

Consistent with paragraph IWP-3400(a), the pump test schedule shall not be maintained during shutdown periods. Accordingly, when not tested during shutdowns, the residual heat removal, containment spray, component cooling, auxiliary component cooling and service water pumps shall be tested prior to attaining criticality, when returning the plant to service.

3.2 Safety Injection and Motor Driven Auxiliary Boiler Feedwater Pumps:

Present plant Technical Specifications and related commitments require full flow testing of the safety injection and motor driven auxiliary boiler feedwater pumps prior to start-up following each reactor refueling. These full flow tests differ from the Section XI required tests of these pumps which are performed under minimum flow conditions using recirculation loops. Full flow tests are maximum capability tests and serve to verify pump operability at conditions closely approximating those for which the pumps are designed. It is intended that these full flow tests serve in lieu of the Section XI required recirculation flow tests during refueling shutdowns. Subsequent recirculation flow tests will commence two months (±25%) from the corresponding full flow test. Although flow rate, suction, discharge and differential pressures will be obtained during full flow testing, test results will not be comparable to those obtained from recirculation tests. Exception is therefore taken to obtaining Section XI specified test data during full flow tests for purposes of comparison with those obtained during recirculation flow tests.

3.3 Recirculation Pumps:

As noted in paragraph 2.3 above, the recirculation pumps are not accessible for testing during normal reactor operation. Testing will be performed during reactor shutdowns for refueling.

3

4.0 INSERVICE PUMP TEST PROGRAM TABULATION

The following tabulation lists each of the pump parameters to be measured or observed and the test interval for recording of those parameters. Justification for exceptions to the Section XI rules (with the exception of test frequency which is discussed in paragraphs 2.0 and 3.0 above) are provided in the notes following the tabulation. 3

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE TEST PROGRAM
QUALITY GROUP A, B AND C PUMPS

PUMP IDENTIFICATION	QUALITY GROUP	PARAMETERS MEASURED/OBSERVED	TEST INTERVAL	SECTION XI CODE RELIEF (except test frequency)
Safety Injection Pumps 21, 22 and 23	B	1. Speed (if variable)	N/A	N/A
		2. Inlet Pressure (P_i)	Two Months	Yes - Note 1
		3. Outlet Pressure (P_o)	Two Months	Yes - Note 1
		4. Differential Pressure (P_o-P_i)	Two Months	Yes - Note 1
		5. Flow Rate (Q)	Two Months	Yes - Note 1
		6. Vibration Amplitude (V)	Two Months	No
		7. Lubricant Level or Pressure	Two Months	No
		8. Bearing Temperature (T_b)	Yearly	Yes - Note 5
Residual Heat Removal Pumps 21 and 22	B	1. Speed (if variable)	N/A	N/A
		2. Inlet Pressure (P_i)	Two Months	No
		3. Outlet Pressure (P_o)	Two Months	No
		4. Differential Pressure (P_o-P_i)	Two Months	No - Note 7
		5. Flow Rate (Q)	Two Months	No
		6. Vibration Amplitude (V)	Two Months	No
		7. Lubricant Level or Pressure	N/A	No - Note 8
		8. Bearing Temperature (T_b)	Yearly	Yes - Note 5
Containment Spray Pumps 21 and 22	B	1. Speed (if variable)	N/A	N/A
		2. Inlet Pressure (P_i)	Two Months	No
		3. Outlet Pressure (P_o)	Two Months	No
		4. Differential Pressure (P_o-P_i)	Two Months	No - Note 7
		5. Flow Rate (Q)	Two Months	No
		6. Vibration Amplitude (V)	Two Months	No
		7. Lubricant Level or Pressure	Two Months	No
		8. Bearing Temperature (T_b)	Yearly	Yes - Note 5
Component Cooling Pumps 21, 22 and 23	C	1. Speed (if variable)	N/A	N/A
		2. Inlet Pressure (P_i)	N/A	Yes - Note 2
		3. Outlet Pressure (P_o)	N/A	Yes - Note 2
		4. Differential Pressure (P_o-P_i)	N/A	Yes - Note 2
		5. Flow Rate (Q)	N/A	Yes - Note 2
		6. Vibration Amplitude (V)	N/A	Yes - Note 2
		7. Lubricant Level or Pressure	N/A	Yes - Note 2
		8. Bearing Temperature (T_b)	N/A	Yes - Note 2

INDIAN POINT NUCLEAR GENERATING UNIT NO. 2
INSERVICE TEST PROGRAM
QUALITY GROUP A, B AND C PUMPS

PUMP IDENTIFICATION	QUALITY GROUP	PARAMETERS MEASURED/OBSERVED	TEST INTERVAL	SECTION XI CODE RELIEF (except test frequency)
Auxiliary Component Cooling Pumps 21 and 22	C	1. Speed (if variable)	N/A	N/A
		2. Inlet Pressure (P_i)	Two Months	No - Note 4
		3. Outlet Pressure (P_o)	Two Months	No - Note 4
		4. Differential Pressure (P_o-P_i)	Two Months	No - Note 4
		5. Flow Rate (Q)	Two Months	No
		6. Vibration Amplitude (V)	Two Months	No
		7. Lubricant Level or Pressure	N/A	No - Note 8
		8. Bearing Temperature (T_b)	Yearly	Yes - Note 5
Service Water Pumps 21,22, 23, 24, 25 and 26	C	1. Speed (if variable)	N/A	N/A
		2. Inlet Pressure (P_i)	N/A	Yes - Note 3
		3. Outlet Pressure (P_o)	N/A	Yes - Note 3
		4. Differential Pressure (P_o-P_i)	N/A	Yes - Note 3
		5. Flow Rate (Q)	N/A	Yes - Note 3
		6. Vibration Amplitude (V)	N/A	Yes - Note 3
		7. Lubricant Level or Pressure	N/A	Yes - Note 8
		8. Bearing Temperature (T_b)	N/A	Yes - Note 3
Auxiliary Feedwater Pumps 21 and 23 (Motor Driven)	C	1. Speed (if variable)	N/A	N/A
		2. Inlet Pressure (P_i)	Two Months	No
		3. Outlet Pressure (P_o)	Two Months	No
		4. Differential Pressure (P_o-P_i)	Two Months	No - Note 6
		5. Flow Rate (Q)	N/A	No - Note 4
		6. Vibration Amplitude (V)	Two Months	No
		7. Lubricant Level or Pressure	Two Months	No
		8. Bearing Temperature (T_b)	Yearly	Yes - Note 5
Recirculation Pumps 21 and 22	B	1. Speed (if variable)	N/A	N/A
		2. Inlet Pressure (P_i)	Refuelings	No
		3. Outlet Pressure (P_o)	Refuelings	No
		4. Differential Pressure (P_o-P_i)	Refuelings	Yes - Note 7
		5. Flow Rate (Q)	N/A	No - Note 4
		6. Vibration Amplitude (V)	Refuelings	No
		7. Lubricant Level or Pressure	N/A	No - Note 8
		8. Bearing Temperature (T_b)	Refuelings	Yes - Note 5

NOTES - INSERVICE TEST PROGRAM

Quality Group A, B and C Pumps

1. Functional requirements for the safety injection pumps, based on the most recent ECCS analysis and as currently specified in the safety injection pump functional test procedure, are as follows:

CRITERIA A (Miniflow Conditions of 25 to 35 gpm) -

(a) the safety injection pumps shall be considered operable if the pump heads are greater than 3,292 feet or,

(b) if one pump head is below 3,292 feet, the safety injection pumps shall be considered operable if the heads for the two higher head pumps are in the acceptance region of attached Figure E5-1.

CRITERIA B (Miniflow Conditions of less than 25 gpm for one or more pumps) -

(a) the safety injection pumps shall be considered operable if the pump heads are greater than 3,311 feet, or

(b) if one pump head is below 3,311 feet, the safety injection pumps shall be considered operable if the heads for the two higher head pumps are in the acceptance region of attached Figure E5-2.

3

Exception is taken from having to meet the allowable ranges of test quantities as defined in Table IWP-3100-2 for the safety injection pump hydraulic performance parameters, with substitution of the currently defined parameters as permitted under IWP-3210.

2. Due to the demands of dependent systems, the individual testing of component cooling pumps as required by IWP-3400(a) could jeopardize plant operation. Although instrumentation is installed which will permit the recording of inlet pressure of each pump, pressure measurement on the pump discharge can only be monitored at the common discharge header. The plant design does not incorporate independent flow measurement instrumentation. Currently, correct performance of these pumps can only be assessed on their continued ability to perform their intended function. An Engineering review is underway to provide for independent measurement of the hydraulic parameters for each pump as required by IWP-3400(a) and exception is taken to implementing the required tests on these pumps until modifications have been completed.

3. The service water pumps are vertical design with no means of direct inlet pressure measurement as required by IWP-4200 at this time. Due to demands of dependent systems, the individual testing of service water pumps, as required by IWP-3400(a), could jeopardize plant operation. Although individual pump discharge pressures can be measured, the plant design does not incorporate any flow measurement instrumentation. Currently, correct performance of these pumps can only be assessed on their continued ability to perform their intended function. An Engineering review is underway to provide for independent measurement of the hydraulic parameters of each pump and exception is taken to implementing the required tests on the service water pumps until appropriate modifications have been completed.

4. The test circuits employed for testing of these pumps are considered as fixed resistance systems. In accordance with Table IWP-3100-1, either differential pressure or flow rate require measurement, not both.

5. Exception is taken to the time interval requirements between successive measurements of bearing temperature as specified by paragraph IWP-3500(b). Pump operating time for purposes of testing is severely limited by potential pump overheating under the minimum flow conditions dictated by the test circuit. Accordingly, bearing temperature will be measured once, after fifteen minutes of pump operation as experience indicates bearing temperature to be sufficiently stabilized at that point.

6. Consistent with paragraph IWP-3210, alternate range limits of 1350 to 1550 psi are substituted for the acceptable range of differential pressure in lieu of the acceptable range specified in Table IWP-3100-2.

7. The manufacturer's certified head-flow curve, established by test prior to pump installation, shall serve as the reference quantities for head and flow. The pump shall be considered acceptable for service (acceptable range of Table IWP-3100-2) if in subsequent tests, developed head does not decrease by more than 5% of the manufacturer's certified head on recirculation flow. This 5% derating is consistent with the ECCS analysis which takes into account the effects of normal pump wear on pump performance over the life of the plant. It should be noted that the Section XI specified upper limits for head are of little practical value when using the manufacturer's certified head-flow curve as the reference quantity since under normal test conditions the manufacturer's quantities cannot be exceeded. Data exceeding the manufacturer's quantities are indicative of non-standard test conditions attributable to varied system alignments or other test prerequisites.

8. The design of these pumps does not incorporate independent lubrication systems having measurable or observable characteristics. Lubrication is either by sealed grease type bearings or pumped fluid.

3

Figure E5-1 - SAFETY INJECTION PUMP ACCEPTANCE CRITERIA A

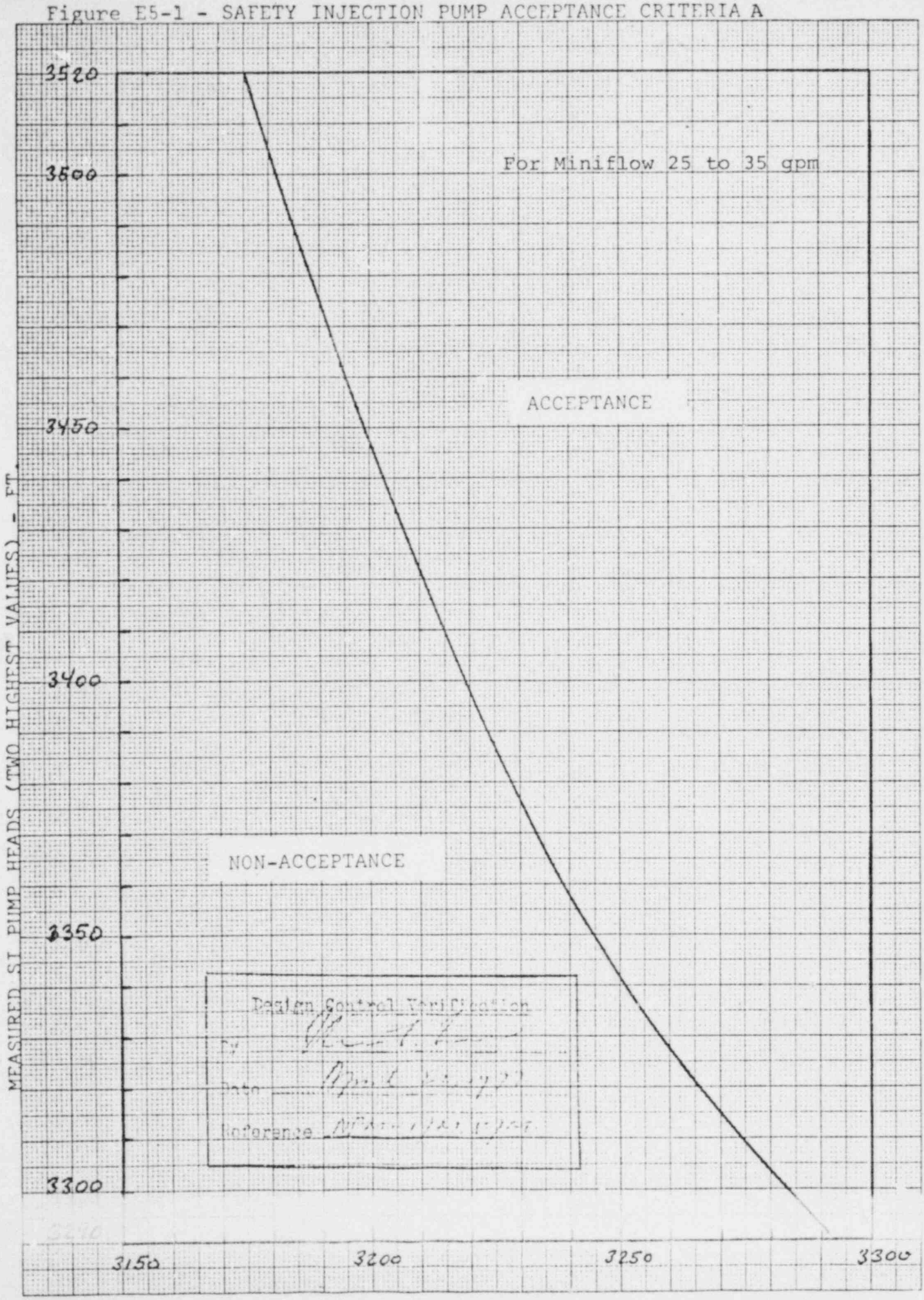

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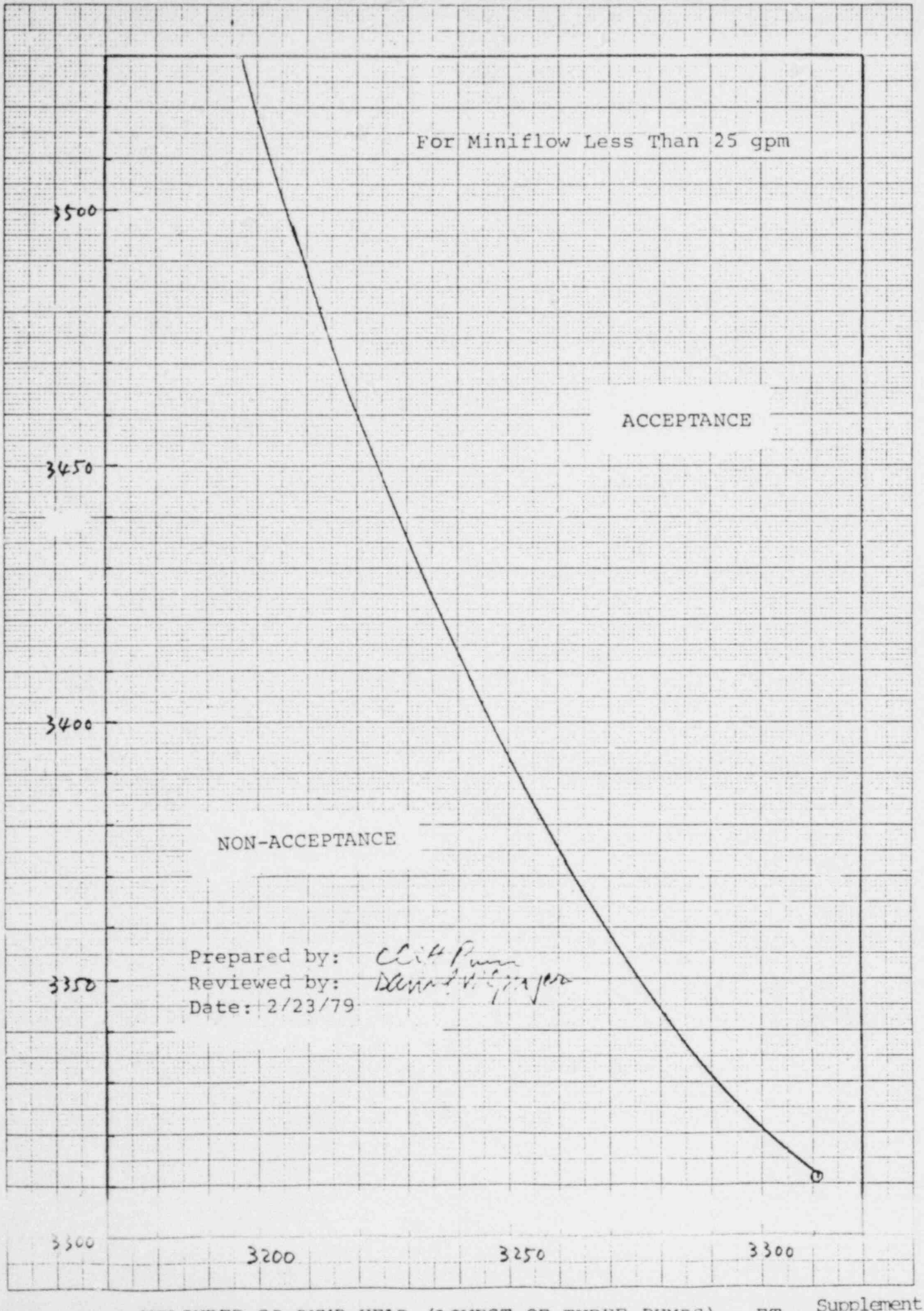
Figure E5-2 - SAFETY INJECTION PUMP ACCEPTANCE CRITERIA B



ENCLOSURE 6

Inservice Test Program
Quality Group A, B & C Valves

Indian Point Unit No. 2
September, 1977
(Supplement 1)

Supplement 3
Feb. 1979

Indian Point Nuclear Generating Unit No. 2

Inservice Test Program - Quality Group A, B & C Valves

1.0 GENERAL:

This valve inservice test program addresses the requirements for Quality Group A, B and C valves. Those valves which are used for operating convenience only, such as manual vent, drain, instrument and test valves, and valves used for maintenance only are excluded from the inservice test program per IWV-1300.

2.0 VALVE STROKE TIME MEASUREMENT:

Paragraph IWV-3410(c) of the ASME Code Section XI requires that the stroke time of all power-operated Category A and B valves be measured during the performance of their required exercising tests. Motor operated valves (which have various specified maximum stroke times depending on system and application) are the only valves considered to be "power-operated" within the context of this requirement and, accordingly, will be tested for stroke time as required. In addition, although air-operated valves are not required to be tested for stroke time, certain air-operated valves will have their stroke times measured where special timing requirements have been specified and established in order to prevent or mitigate the consequences of a postulated accident.

3.0 VALVE TESTING FREQUENCY DURING NORMAL OPERATIONS:

As required by IWV-3000, valves are full-stroke exercised during normal plant operation where practical. For Category A and B valves which can be exercised "on-line", the testing interval between successive tests shall not exceed 3 months (±25%). The allowed 25% extension to a testing interval is consistent with current NRC surveillance testing philosophy. Furthermore, the overall intent of the Section XI IWV-3400 requirements is met in that each "on-line" valve will be tested at least 4 times per year at approximately equal intervals. There are no Category C valves which can be tested "on-line". Category D and E valves do not require any "on-line" testing. The "on-line" testing shall be suspended during the performance of the "off-line" testing described in Section 4.0 below.

4.0 VALVE TESTING FREQUENCY DURING AND FOLLOWING SHUTDOWNS:

During the development of this valve testing program, those valves which cannot be full-stroke exercised "on-line" were determined. These valves were identified as such since their operation would either jeopardize the integrity of their systems or would cause perturbations within their systems sufficient to result in a plant trip. For the same reasons, part-stroke

3

exercising of these valves "on-line" was also determined to be impractical. Accordingly, these "off-line" valves shall be full-stroke tested when the plant is in the cold shutdown condition.

IWV-3000 requires that valves which cannot be operated during normal plant operation be full-stroke exercised at each cold shutdown. In case of frequent cold shutdowns, the requirements state that such Category A and B valves need not be exercised more often than once every 3 months and that Category C check valves need not be exercised more often than once every 9 months. Exception is taken to these requirements. More than half of the Category A and B valves and Category C check valves (i.e., approximately 54%) included in the valve inservice test program cannot be operated during normal plant operation and can only be exercised during a cold shutdown period. Because of the considerable time and manpower required to perform the complete exercising test for such a large and varied group of valves, all "off-line" valves will be tested only at cold shutdown during refueling outages. Cold shutdown outages, whether scheduled or unscheduled, which occur between refuelings do not provide sufficient time to perform such testing and the diversion of needed manpower unduly extends the outage. Refueling outages are of sufficient duration such that the "off-line" valve testing program can be conducted with minimal impact on outage critical path. Accordingly, valves that cannot be full-stroke exercised during normal plant operation shall be full-stroke exercised at cold shutdown during refueling outages.

5.0 INSERVICE VALVE TEST PROGRAMS - DETAILED DESCRIPTION:

The following pages contain the detailed description of the inservice valve test program. The Quality Group A, B and C valves have been categorized as required by the Section XI Code into Category A, B, C, D and E valves. The valve testing program will be conducted as described in the following pages and exceptions to the Section XI rules (with the exception of test frequency which is discussed in paragraphs 3.0 and 4.0 above) are addressed for each category where applicable. 3

CATEGORY A VALVES

The Category A valves identified below are containment isolation valves and will be leak tested at a frequency of not less than once every two years as required by Appendix J to 10CFR50 and as specified in the technical specifications. The performance of the Appendix J Type C containment isolation valve leak rate testing shall be considered to satisfy the requirements of IWV-3420 for Category A valves. 3

The Category A valves identified below will also be full-stroke exercised at 3 month intervals during normal plant operation, as required by IWV-3410, with the exception of those valves marked (1), (2), (3), (4), (5) or (6). The exceptions or code relief represented by these notes are as follows: 3

(1) These valves cannot be operated during normal plant operation and will be full-stroke exercised only during cold shutdown at refueling outages. As discussed earlier, no part-stroke exercising during normal plant operation has been deemed practical for any of these valves. 3

(2) These valves are either locked open or locked closed manual containment isolation valves and as such are categorized as Category AE valves. As a result of their locked status, these valves will satisfy the Category E requirements set forth in IWV-3700. However, since they are containment isolation valves, these valves will also satisfy the Category A leak testing requirements of IWV-3420 but will be exempt from the exercising requirements of IWV-3410.

(3) These valves are check valves that serve as containment isolation valves and as such are categorized as Category AC. Accordingly, these valves will satisfy the Category A leak testing requirements of IWV-3420. Existing plant design and construction provides no means for indication or verification of check valve disk motion in either direction. However, proper position for satisfying the containment isolation function is confirmed by acceptable Category A valve leak rate testing results. Therefore, these Category AC check valves will be exempt from the exercising requirements of IWV-3410 and IWV-3520.

(4) These valves are containment isolation valves for instrument lines used only for testing. Such a line is normally excluded from IWV testing requirements per IWV-1300. However, since these valves perform a containment isolation function, they will satisfy the requirements of IWV-3420 but will be exempt from the requirements of IWV-3410.

(5) These valves are relief valves that also serve as containment isolation valves. Therefore, they are categorized as Category AC. As

a result, they will satisfy the Category A leak testing requirements of IWV-3420. They will, however, be exempt from IWV-3410 exercising requirements since as relief valves they will satisfy the requirements of IWV-3510.

(6) These valves are used for maintenance purposes only but also constitute the containment isolation boundary for their particular lines. Since this type of maintenance valve is normally excluded from IWV testing per IWV-1300, these valves will satisfy the requirements of IWV-3420 but will be exempt from the exercising requirements of IWV-3410.

Safety Injection System

867B (3)
869B (2)
850B (2)
851B
859A (2)
859C (2)
867A (3)
869A (2)
850A (2)
851A
885A
885B
888A
888B
863
4312 (3)
878A (2)
878B (2)
743 (2)
1870 (2)

Auxiliary Coolant System

744 (1)
741 (3)
732 (2)
797 (1)
784 (1)
FCV-625 (1)
796
793
798
791

Chemical Volume & Control System

222 (1)
226 (1)
227 (1)
205 (1)
201 (1)
202 (1)
241A (1)
250A (1)
241B (1)
250B (1)
241C (1)
250C (1)
241D (1)
250D (1)

Reactor Coolant System

549
548
550
518 (3)
552
519
580A (4)
580B (4)

Sampling System

956A
956B
956C
956D
956E
956F
956G
956H
958
959
990C
990A
990B

Post Accident Containment Air Sampling System

1875A
1875B
1875C
1875D
1875E
1875F
1875G
1875H
1875J

Service Water System

SWN-41 (5 valves) (1)
SWN-42 (5 valves) (5)
SWN-43 (5 valves) (6)
SWN-44 (5 valves) (1)
SWN-51 (5 valves)
SWN-71 (5 valves) (1)

Hydrogen Recombiner System

1882A	4430
1882-9 (4)	IV-5A
4432	1876-8 (4)
IV-5B	4429
1876-9 (4)	IV-3A
4431	1875-8 (4)
IV-3B	IV-2A
1875-9 (4)	IV-2B

Steam Generator Blowdown & Sampling System

PCV-1223	PCV-1214
PCV-1223A	PCV-1214A
PCV-1224	PCV-1215
PCV-1224A	PCV-1215A
PCV-1225	PCV-1216
PCV-1225A	PCV-1216A
PCV-1226	PCV-1217
PCV-1226A	PCV-1217A

3

Waste Disposal System

1786	1789
1787	1702
1610	1705
1616 (3)	1728
1788	1723

Miscellaneous Containment Isolation Valves

1234		- Containment Air Sample
1235		- Containment Air Sample
1236		- Containment Air Sample
1237		- Containment Air Sample
PCV-1229		- Air Ejector to Containment
PCV-1230		- Air Ejector to Containment
SA-24 (2 valves)	(6)	- Service Air To Containment
UH-43	(2)	- Auxiliary Steam System
UH-44	(2)	- Auxiliary Steam System
1170	(1)	- Containment Purge System
1171	(1)	- Containment Purge System
1172	(1)	- Containment Purge System
1173	(1)	- Containment Purge System
1190	(1)	- Containment Pressure Relief System
1191	(1)	- Containment Pressure Relief System
1192	(1)	- Containment Pressure Relief System
IA-39	(3)	- Instrument Air/Post-Accident Venting Supply
PCV-1228	(1)	- Instrument Air/Post-Accident Venting Supply
E-1		- Post-Accident Venting Exhaust
E-2		- Post-Accident Venting Exhaust
E-3		- Post-Accident Venting Exhaust
E-5		- Post-Accident Venting Exhaust
MW-17 (2 valves)	(6)	- City Water to Containment
1814A	(2)	- Containment Pressure Sensing Instrument Lines
1814B	(2)	- Containment Pressure Sensing Instrument Lines
1814C	(2)	- Containment Pressure Sensing Instrument Lines
85A	(3)	- 80'-el Personnel Airlock
85B	(3)	- 80'-el Personnel Airlock
85C	(1)	- 80'-el Personnel Airlock
85D	(1)	- 80'-el Personnel Airlock

Miscellaneous Containment Isolation Valves (cont'd)

95A	(3) - 95'-el Personnel Airlock
95B	(3) - 95'-el Personnel Airlock
95C	(1) - 95'-el Personnel Airlock
95D	(1) - 95'-el Personnel Airlock

CATEGORY B VALVES

The Category B valves identified below are those Quality Group A, B and C valves that may be required to change position for fulfillment of their functions following an accident or for safe shutdown and, therefore, are required to be exercised to the required position by IWV-3410. These valves will be full-stroke exercised at 3 month intervals during normal operation with the exception of those valves marked (1) or (2). The exceptions or code relief represented by these notes are as follows: 3

(1) These valves cannot be operated during normal plant operation and will be full-stroke exercised only during cold shutdown at refueling outages. As discussed earlier, no part-stroke exercising during plant operation has been deemed practical for any of these valves. 3

(2) These valves are the main steam isolation valves (MSIVs) and are categorized as Category BC. They are stop-check type valves with pneumatic operators holding the valve disks out of the main steam flow path. The MSIVs will satisfy the exercising requirements of IWV-3410 but, as permitted by IWV-3410(b)(1), will be full-stroke exercised only during cold shutdown at refueling outages as presently required by the plant technical specifications. Part-stroke exercising of these valves during normal plant operation is not practical. 3

Safety Injection System

866C	887A	1822A	880C
866D	887B	1822B	880D
856C (1)	889A	1821	880E
856D (1)	889B	1802A	880F
856F (1)	882 (1)	1802B	880G
866A	842 (1)	894D (1)	880H
866B	843 (1)	894A (1)	880J
856A (1)	876A	894B (1)	880K
856E (1)	876B	894C (1)	898
856B (1)	1810 (1)	880A	891A
1805	1831	880B	891B
			891C
			891D

3

Auxiliary Coolant System

745A	RCV-017	747	756B (1)
745B	822B (1)	756A (1)	1873C
730 (1)	734B	734E	1873D
731 (1)	HCV-638	734F	831
822A (1)	HCV-640	1873A	733C
734A	746	1873B	
769 (1)	789 (1)		
786 (1)			

3

Chemical Volume & Control System

1100
1247
1133
PCV-1049 (1)
1269
1679
1109
1104
1119
1120
200A (1)
200B (1)
200C (1)
HCV-133 (1)
212 (1)
LCV-459 (1)
204A (1)
204B (1)
213 (1)
HCV-123 (1)
215 (1)
PCV-135 (1)
271 (1)
310 (1)
313 (1)
LCV-112A (1)
387 (1)
391 (1)
343B (1)
323B (1)
TCV-149 (1)
309 (1)
311A (1)
340A (1)
346 (1)
352 (1)
269 (1)
FCV-111B (1)
LCV-112C (1)
FCV-110B (1)
293 (1)
FCV-110A (1)
LCV-112B (1)
288 (1)
333 (1)
364 (1)
367A
367B
HCV-105
366 (1)
HCV-104
358
372
295
285
FCV-111A (1)
265
268

Reactor Coolant System

PCV-455B (1)
PCV-455A (1)
536 (1)
PCV-456 (1)
535 (1)
PCV-455C (1)

Sampling System

951
953
955A
955B
974A
974B
975

Main Steam System

PCV-1135
MS-1-22 (2)
PCV-1134
MS-1-21 (2)
PCV-1136
MS-1-23 (2)
PCV-1137
MS-1-24 (2)
MS-41
MS-42
PCV-1310A (1)
PCV-1310B (1)
PCV-1139
HCV-1118

Condensate & Boiler Feedpump System

LCV-1158
PCV-1188
PCV-1187
PCV-1189

Boiler Feedwater System

FCV-427 (1)
FCV-427L (1)
FCV-447 (1)
FCV-447L (1)
FCV-437 (1)
FCV-437L (1)
FCV-417 (1)
FCV-417L (1)
FCV-406B
FCV-406A
FCV-406C
FCV-406D
FCV-405C
FCV-405A
FCV-405B
FCV-405D
FCV-1123 (1)
FCV-1121
PCV-1213
BFD-74

Service Water System

SWN-31 (1)
SWN-33 (2 valves) (1)
SWN-38 (1)
SWN-40 (2 valves) (1)
SWN-5 (1)
SWN-39 (1)
SWN-7 (1)
SWN-4 (1)
SWN-6 (1)
SWN-30 (1)
SWN-29
FCV-1111 (1)
TCV-1105
FCV-1176
FCV-1112 (1)
TCV-1104
FCV-1176A
SWN-32 (1)

CATEGORY C VALVES

I. Check Valves:

IWV-3520 requires periodic exercising of Category C check valves. With the exception of a number of engineered safeguards valves in the Safety Injection, Main Steam, and Containment Isolation Systems, existing plant design and construction provides no means for testing check valves nor any means for indication or verification of check valve disk position. However, proper operation of Quality Group A, B and C systems and absence of any indicated or observable abnormalities assures proper operation of check valves within these systems. Accordingly, except for those check valves discussed below, exception is taken to satisfying the exercising requirements of IWV-3520. 3

Those check valves that serve as containment isolation valves are categorized as Category AC and are identified in the "Category A Valves" listing by note (3). These check valves will be tested as described therein.

Those stop-check type valves that serve as the Main Steam Isolation Valves (MSIVs) are categorized as Category BC and are identified in the "Category B Valves" listing by note (2). These MSIVs will be tested as described therein.

The Category C check valves identified below are located in the Safety Injection System and are tested during cold shutdown at refueling intervals for flow by system operation and for gross reverse leakage (i.e. closure) by means of system draining and use of installed test connections. These valves represent the reactor coolant system pressure boundary for their particular lines and as such prevent overpressurizing the Safety Injection System during normal operation. The above operability tests satisfy the exercising requirements of IWV-3520 but exception is taken to the testing frequency. Because of the substantial effort involved in the testing, these valves will be tested at refueling intervals.

Safety Injection System

857A	857G	895A	897C
857B	857H	895B	897D
857C	857J	895C	838A
857D	857K	895D	838B
857E	857L	897A	838C
857F	857M	897B	838D

II. Safety/Relief Valves:

IWV-3510 requires periodic testing of safety and relief valves. The Category C safety/relief valves identified below will be tested in accordance with IWV-3510 at the frequency defined in Table IWV-3510-1 except as noted. Those relief valves that provide a containment isolation function are categorized as Category AC and are marked below as 3

(1). These particular relief valves will satisfy the Category A leak test requirements of IWV-3420 but will be exempt from IWV-3410 exercising requirements since as relief valves they will satisfy IWV-3510.

Those valves marked below as (2) and (3) are the pressurizer safety valves and main steam safety valves, respectively. The unit technical specifications presently require testing for these valves at refueling intervals which is more conservative than applying the test frequency established by Table IWV-3510-1. These 23 valves (pressurizer and main steam safety valves) shall continue to be tested at refueling intervals and the remaining relief valves, which are subject to the testing requirements of IWV-3510, shall be tested at a frequency consistent with Table IWV-3510-1. The testing of the 23 valves described above shall not be considered for satisfying the requirements of Table IWV-3510.

Auxiliary Coolant System relief valves 819A and 819B (marked as (4) below) shall be exempt from the testing requirements of IWV-3510. These valves are located on the component cooling water return line from the residual heat removal heat exchangers. Their locations (inside containment) are inaccessible during normal operation. In addition, the system must be operating when the unit is in the cold shutdown condition to remove decay heat from the reactor core. Furthermore, these valves are welded in place and have no means provided for isolation from the system for testing. Finally, these valves are located in a very high radiation area and simple access to the valves results in significant personnel radiation exposure. Accordingly, because of plant design, the above stated reasons demonstrate the impracticality of testing relief valves 819A and 819B and they shall be exempt from IWV-3510 testing requirements. 3

Safety Injection System

855
1828
1815
892A
892B
892C
892D

Auxiliary Coolant System

782
783A
783B
783C
783D
792
1836
819A (4)
835
819B (4)
785B

Chemical Volume & Control System

218
203
263
264
231
234
237

Reactor Coolant System

PCV-464 (2)
PCV-466 (2)
PCV-468 (2)

Condensate and Boiler Feedpump System

CT-35 (3 valves)

Main Steam System

MS-45 (4 valves) (3)
MS-46 (4 valves) (3)
MS-47 (4 valves) (3)
MS-48 (4 valves) (3)
MS-49 (4 valves) (3)
MS-52

Service Water System

SWN-42 (5 valves) (1)
SWN-63 (3 valves)
SWN-36 (2 valves)

Boiler Feedwater System

BFD-69

CATEGORY D VALVES

There are no Category D valves at Indian Point Unit No. 2.

CATEGORY E VALVES

The Category E valves identified below will satisfy the requirements of IWV-3700. That is, operational checks, with appropriate record entries, will record the position of these valves before operations are performed and after operations are completed, and verify that each valve is locked or sealed in its required position.

Those normally locked valves that also perform a containment isolation function are categorized as Category AE and are marked (1) below. These valves will satisfy the IWV-3420 leak testing requirements but, since they are locked in position, will satisfy IWV-3700 requirements and will be exempted from IWV-3410 exercising requirements as described in note (2) of the "Category A Valves" listing.

Safety Injection System

869B (1)	850A (1)	1806A	743 (1)
850B (1)	846	1806B	1870 (1)
859A (1)	878A (1)	1841	1823F
859C (1)	878B (1)	1839A	873B
869A (1)	1860	1839B	

Auxiliary Coolant System

739A	735A	281	371
739B	1819	273	1263
742	735B	276	1264
732 (1)	832	359	1102

Chemical Volume & Control System

Boiler Feedwater System

BFD-51	BFD-78	UH-43 (1)
BFD-77		UH-44 (1)

Auxiliary Steam System

Containment Pressure Sensing Instrument Lines

1814A (1)	1814B (1)	1814C (1)