EDWIN I. HATCH NUCLEAR PLANT

UNIT 1

RESPONSE TO

THE PROVISIONS OF

10 CFR 50.55a(g)

"INSERVICE INSPECTION PROGRAM"

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1.0 INTRODUCTION

1.1 General

This document describes the new Inservice Inspection Program for Edwin I. Hatch Nuclear Plant, Unit No. 1. The original ISI program for Hatch-1 was prepared in accordance with the ASME Boiler and Pressure Vessel Code, 1971 Edition, including the Summer 1972 Addenda for Class 1 components. Class 2 components were limited to the Main Steam and Turbine Steam Bypass Systems. Class 2 components were scheduled for examination in accordance with the Winter 1972 Addenda of Section XI.

The new inservice inspection plan is an upgrading of the program to meet the examination requirements of the 1974 Edition of Section XI, including Addenda through the Summer, 1975.

1.2 Effective Date

The new ISI plan shall go into effect at the start of the second 40-month period of plant commercial operation. The effective date is April 30, 1979.

1.3 Scope

This document is a description of the ISI program for Unit 1 of Plant Hatch. The programs for Class 1, 2, and 3 component examinations and for pump and valve surveillance testing are included.

1.4 Component Upgrading

All plant components have been reviewed to determine the appropriate classification for inservice inspection. Regulatory Guide 1.26 was used for guidance in determining component classifications.

It must be noted that the classification of components as ASME Class 1, 2, or 3 equivalent for inservice inspection does not imply that the components were designed in accordance with ASME requirements. The component design codes remain as stated in the FSAR.

1.5 Subsequent ISI Plan Revisions

In accordance with the existing regulations of 10CFR50.55a, the inservice examination program for Class 1, 2, and 3 components will be reviewed near the end of each 40-month interval. At that time the plan will be modified as required to bring it into compliance with the latest NRC-approved version of Section XI. The inservice testing program for pumps and valves will be similarly reviewed and modified every 20 months.

1.6 Responsibility

Georgia Power Company bears the overall responsibility for the performance of the inservice examinations. Certain non-destructive examinations will be performed by a qualified examination agency. The results of such examinations will be reported to Georgia Power Company for final evaluation and disposition.

1.7 Records

Records and documentation of all information and inspection results, which provide the basis for evaluation and which facilitate comparison with results from previous and subsequent inspections, will be maintained and available for the active life of the plant in accordance with Section XI, IWA-6000.

1.8 Methods of Examination

The method of examination planned for each area is delineated in subsequent sections. Personnel performing NDT examinations will be trained in accordance with the American Society for Nondestructive Testing (ASNT) "Recommended Practice SNT-TC-1A, Supplements and Appendices", as applicable for technique and method used.

1.8.1 Ultrasonic

It is anticipated that most volumetric examinations will be performed ultrasonically. Examinations will be conducted in accordance with the requirements of ASME Section XI and Section V as appropriate.

1.8.2 Radiographic

Radiographic techniques will be used to supplement UT as required.

1.8.3 Liquid Penetrant

Dye penetrant examinations will be performed whenever a surface examination is required on non-magnetic piping.

1.8.4 Magnetic Particle

Magnetic particle tests will usually be used when surface examination of carbon steel components is required.

1.8.5 Visual

A visual (VT) examination is employed to provide a report of the general condition of the part, component, or evidence of leaking.

1.9 Repair Procedures

Repairs to the pressure retaining boundary of ASME Class 1, 2, or 3 (equivalent) components will be performed in accordance with IWA-4000 by utilizing Georgia Power Company approved procedures which generally comply with the code applicable to the construction of the component.

2.0 INSERVICE INSPECTION FOR CODE CLASS 1 COMPONENTS

Table 1 provides a tabulation of the Class 1 pressure-retaining components (and their supports) subject to the inspection requirements of Subsection IWB of Section XI of the ASME Boiler and Pressure Vessel Code, 1974 Edition, and Addenda through Summer 1975. These components will be inspected in accordance with the requirements of Subsection IWB to the extent practical. This tabulation identifies the components to be inspected, the Section XI examination item and category, area to be examined, and the method of examination. Where release from the inspection requirements of Subsection IWB is requested, information is provided which identifies the applicable Code requirements, justification for the release requested, and the inspection method to be used as an alternative. Table IWB-2600 items not applicable to the Edwin I. Hatch Nuclear Plant-Unit 1 have also been listed and identified in the interest of completeness. Items applicable to pressurized water reactors only, such as steam generators and pressurizers, have been omitted entirely.

Some components included in this program were not built to the ASME Section III Code because it was not in effect at the time the component was purchased. However, these components will be inspected in accordance with the requirements of Subsection IWB to the extent practicable. The repair procedures of IWB-4000 will be applied to those components constructed to Section III of the ASME Code. For those components not constructed to Section III of the ASME Code, the rules of IWA-4000 will be applied.

Hydrostatic testing will be conducted in a manner that will satisfy the requirements of IWA-5000 and IWB-5000. Where adjoining pipe sections have different test pressures, they will be separated whenever practicable and each section tested at its specified pressure. Where it is not practicable to separate adjoining sections of piping (e.g., boundary is check valve), the sections will be tested together at the lower of the specified test pressures. No point in the piping shall be permitted to experience a pressure greater than the specified test pressure. 1

Components that are exempted from volumetric and surface examination by IWB-1220 will be hydrostatically tested per the requirements of IWA-5000 and IWB-5000.

2.1 Requests for Relief from ASME Section XI Requirements

2.1.1 Reactor Recirculation Pumps

2.1.1.1 Requirement From Which Relief Requested

Table IWB-2500, Category B-L-2, and Table IWB-2600, Item B5.7, require visual examination of the internal pressure boundary surfaces of one pump in each group of pumps of similar function to be performed once per inspection interval.

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2.1.1.2 Justification

This requirement, in absence of other required maintenance, would necessitate dismantling a recirculation pump solely to perform a visual inspection of

internal surfaces and, as such, represents an unnecessary exposure to radiation and contamination and an excessive expense. A job of this scope also presents an unnecessary risk of an industrial accident due to the cramped quarters and limited visibility resulting from the use of full anti-C protective equipment. We estimate that the dismantling and reassembly of one pump would consume more than 1,000 manhours and would result in a cumulative dose of between 10 and 50 man-rem.

The net result of this major effort would be a visual inspection consuming about 8 manhours. The questionable benefit to be obtained from such an inspection when measured against the cost in man-rem appears to be in conflict with the concept of "As Low as Reasonably Achievable". In view of the cost in dollars, potential hazards, and man-rem and in view of the minimal benefits to be obtained, we conclude that this Code requirement is impractical.

2.1.1.3 Testing in Lieu of Section XI Requirements

The internal surfaces of the recirculation pump casings will be visually inspected whenever these surfaces are accessible as a result of disassembly for other maintenance purposes or at the end of the ten-year interval when disassembly is undertaken for examination of performance of pump casing.

2.1.2 Hydraulic Shock Suppressors for Class 1 Piping, Pumps, and Valves

2.1.2.1 Requirement From Which Relief Requested

Table IWB-2500, Category B-K-2 requires visual examination of all support components and verification of support settings of snubbers and shock absorbers once per inspection interval. Relief is requested from verification of snubber settings.

2.1.2.2 Justification

The hydraulic shock suppressors on Class 1 systems are currently subjected to an ongoing inspection and testing program detailed in the plant Technical Specifications. This program is designed to demonstrate continued operational readiness and structural integrity of the shock suppressors and exceeds the requirements of Table IWB-2500. 1

2.1.2.3 Testing in Lieu of Section XI Requirements

Hydraulic shock suppressors will be inspected and tested in accordance with Technical Specification requirements.

2.1.3 ASME Class 1 (Equivalent) Valves Exceeding 4-Inches Nominal Pipe Size

2.1.3.1 Requirement From Which Relief Requested

Table IWB-2500, Category B-M-2, and Table IWB-2600, Item B6.7 require visual examination of the internal pressure boundary surfaces of one valve in each group of valves of the same design, manufacturing method, manufacturer, and function to be performed once per inspection interval.

2337 056

2.1.3.2 Justification

Disassembly of these valves solely for visual inspection, in absence of other required maintenance, represents an unnecessary exposure to radiation and contamination and an excessive expense. The opening, visual inspection, and closing of these valves would require an expenditure of approximately 2 to 3 man-rem per valve. High contamination levels produce airborne activities of 6 to 10 MPC of I^{131} which requires the use of in-line or constant-flow respiratory equipment. Dose rates from the disassembled valves are typically 0.5 R/hr gamma and greater than 200 R/hr beta. 1

Valves on the recirculation loop suction piping would require off-loading the fuel elements and draining the reactor prior to disassembly. Work on recirculation pump discharge valves and RHR injection valves would require installation of plugs in the jet pump risers. Preparatory work of this scope is considered impractical for the sole purpose of conducting a visual examination. Contamination levels in the valves associated with the recirculation loops are particularly high due to the physical location of these valves at the bottom of the system. 1

During routine maintenance, the valve body internal surfaces are visually examined. Many of these valves, particularly the containment isolation valves, are disassembled for maintenance of leak-tightness. Disassembly of other Class 1 valves solely for internal inspection is counter to the "ALARA" guidelines to keep the occupational dose rates as low as reasonably achievable. In view of the cost in dollars and man-rem, and in view of the minimal benefits obtained, we conclude that this code requirement does not provide sufficient benefits to justify such expenditures. 1

2.1.3.3 Alternate to Section XI Requirement

Class 1 valves exceeding 4 inches nominal pipe size are subjected to visual inspection of the internal surfaces of the valve body when disassembled for maintenance. The coverage provided by inspections during routine maintenance coupled with periodic leak tests and hydrostatic tests will provide adequate assurance of the structural integrity of the Class 1 valve bodies, while keeping exposure to radiation and contamination as low as reasonably achievable.

2.1.4 Flued Head Penetrations

2.1.4.1 Requirements for Which Relief Requested

Table IWB-2500, Category B-J and B-K-1 requires the examination of circumferential butt welds and integrally welded pipe supports, that are located within flued head containment penetration assemblies. These welds and their penetration assembly number are listed below. 1

Penetration No.	Weld Identification No.
X-9A	B21-FW-18A-7A
X-9B	B21-FW-18B-6A

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Penetration No.	Weld Identification No.
X-10	E51-RCIC-4-OUT-20A
X-11	E41-HPCI-10-OUT-15A
X-12	E11-RHR-20-B-Discharge-13A
X-13A	E11-RHR-24-A-Return-3A
X-13B	E11-RHR-24-B-Return-3B
X-14	G31-RWCU-6-OUT-15B
X-14	G31-RWCU-6-OUT-15C
X-16A	E21-CORE SPRAY-10-A-3A
X-16B	E21-CORE SPRAY-10-B-4A
X-17	E11-RHR-4-HS-6A

1

2.1.4.2 Justification

These welds are inaccessible for examination due to the design of the flued head. All of the twelve circumferential butt welds, except for two located in the RWCU penetration, are carbon steel and not subject to intergranular stress corrosion cracking (IGSCC).

Two stainless steel welds that are located in the RWCU penetration were made to replace a Type 304 SS pipe that had undergone IGSCC. They are a flued head with a Type 308L overlay (> 5% ferrite) on the inside surface to a Type 304L solution annealed pipe (< .035% carbon), and a Type 304L pipe-to-pipe weld. These welds were made in accordance with the guidelines of NUREG-0313 to minimize susceptibility to IGSCC.

2.1.4.3 Testing in Lieu of Section XI Requirements

A UT baseline was run for each new weld while the weld was accessible during the repair to ensure a high quality weld.

In accordance with IWB-5221 a system leakage test is to be performed prior to startup following each reactor refueling outage. This is the same type test that detected the crack in the original pipe.

2.1.5 Control Rod Drive Housings

2.1.5.1 Requirements for Which Relief Requested

Table IWB-2500, Category B-O requires examination of the pressure-retaining welds in the peripheral control rod drive housings. Each housing has one upper weld located near the reactor vessel bottom head and one lower weld located at the housing flange.

2.1.5.2 Justification

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Because of the proximity of the upper weld to the vessel, the dose rate is too high to permit examination of this weld. Dose rates are typically 20 to 30 R/hr and an examination would expend 10-15 man-rem per housing.

The lower welds are inaccessible for examination because of the location and design of the housings. Physical accessibility by an inspector is extremely limited by the close proximity of the housings to each other and by the sup-

port arrangement. Also, the insert and withdraw lines to the CRD are connected at the top of ti. housing flange and prevent access to much of the weld. The combination of these factors prevents these welds from being examined.

2.1.5.3 Testing in Lieu of Section XI Requirements

These welds are located within the hydrostatic test boundary of the Nuclear Steam Supply System. Therefore, they will be tested per IWB-5000. There are no other alternate means of testing available for these welds.

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TABLE 1
ISI PROGRAM
ASME CODE CLASS 1 COMPONENTS

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component Description	Area to be Examined	Method of Examination	Code Relief Requested
B1.1	B-A	Reactor Vessel	Circumferential and vertical welds in the core belt area	Volumetric	No
B1.2	B-B	Reactor Vessel	Circumferential and vertical welds in other than core belt area and meridional welds in bottom head torus, bottom head dome, and close head	Volumetric	No
B1.3	B-C	Reactor Vessel	Vessel-to-flange and head-to-flange circumferential welds	Volumetric	No
B1.4	B-D	Reactor Vessel	Primary nozzle-to-vessel welds and nozzle inside radius section	Volumetric	No
B1.5	B-E	Reactor Vessel	Vessel penetrations: control rod drives instrumentation	Visual (IWA-5000)	No
B1.6	B-F	Reactor Vessel	Nozzle-to-safe-end welds	Covered by IWB-2600 Item B4.1	No
B1.7	B-G-1	Reactor Vessel Closure Head	Closure studs, in place	See Note 1	No
B1.8	B-G-1	Reactor Vessel Closure Head	Closure studs and nuts removed	See Note 1	No
B1.9	B-G-1	Reactor Vessel	Ligaments between threaded stud holes	Volumetric	No
B1.10	B-G-1	Reactor Vessel Closure Head	Closure washers, bushings	Visual	No
B1.11	B-G-2	Reactor Vessel	Bolting less than 2 inches	Visual	No

TABLE 1 (Cont'd)

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component Description	Area to be Examined	Method of Examination	Code Relief Requested
B1.12	B-H	Reactor Vessel	Bottom head torus to support skirt	Volumetric	No
B1.13	B-I-1	Reactor Vessel Closure Head	Not applicable	See Note 2	No
B1.14	B-I-1	Reactor Vessel	Vessel cladding	Visual. See Note 3	No
B1.15	B-N-1	Reactor Vessel	Vessel interior	Visual	No
B1.16	B-N-2	Reactor Vessel	Integrally welded core support structures and interior attachments	Visual	No
B1.17	B-N-3	Reactor Vessel	Not applicable (applies to PWRs only)	Not applicable	No
B1.18	B-O	Reactor Vessel	Control rod drive housings	Volumetric. See Note 10	Yes 1
B1.19	B-P	Reactor Vessel	Exempted components	Visual (IWA-5000)	No
B4.1	B-F	Piping	Nozzle-to-safe-end welds	Volumetric and surface	No
B4.2	B-G-1	Piping	Pressure boundary bolting greater than and equal to 2 inches diameter (in place)	Not applicable. See Note 4.	No
B4.3	B-G-1	Piping	Pressure boundary bolting greater than and equal to 2 inches diameter (removed)	Not applicable. See Note 4.	No
B4.4	B-G-1	Piping	Pressure boundary bolting greater than and equal to 2 inches	Not applicable	No

TABLE 1 (Cont'd)

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component Description	Area to be Examined	Method of Examination	Code Relief Requested
B4.5	B-J	Piping	Circumferential and longitudinal welds	Volumetric	Yes. See Note 7.
B4.6	B-J	Piping	Branch connection welds greater than 6 inches diameter	Volumetric	No
B4.7	B-J	Piping	Branch connection welds six inches diameter and smaller	Surface	No
B4.8	B-J	Piping	Socket welds	Not applicable. See Note 5.	No
B4.9	B-K-1	Piping	Integrally welded supports	Volumetric	No
B4.10	B-K-2	Piping	Support components	Visual	Yes See Note 9.
B4.11	B-P	Piping	Exempted components	Visual (IWA-5000)	No
B4.12	B-G-2	Piping	Pressure-retaining bolting. Bolting less than 2 inches diameter	Visual	No
B5.1	B-G-1	Pumps	Pressure-retaining bolts and studs greater than and equal to 2 inches (in place)	Volumetric	No
B5.2	B-G-1	Pumps	Pressure-retaining bolts and studs greater than and equal to 2 inches (when removed)	Volumetric & Surface	No
B5.3	B-G-1	Pumps	Pressure-retaining bolting and studs greater than and equal to 2 inches	Visual	No

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component Description	Area to be Examined	Method of Examination	Code Relief Requested
B5.4	B-K-1	Pumps	Integrally welded supports	Volumetric	No
B5.5	B-K-2	Pumps	Support components	Visual	Yes See Note 9.
B5.6	B-L-1	Pumps	Casing welds	Not applicable. See Note 6.	No
B5.7	B-L-2	Pumps	Casings	Visual	Yes. See Note 8.
B5.8	B-P	Pumps	Exempted components	Visual (IWA-5000)	No
B5.9	B-G-2	Pumps	Pressure-retaining bolting less than 2 inches	Visual	No
B6.1	B-G-1	Valves	Pressure-retaining bolting greater than and equal to 2 inches diameter (in place)	Volumetric	No
B6.2	B-G-1	Valves	Pressure-retaining bolting greater than and equal to 2 inches diameter (removed)	Volumetric	No
B6.3	B-G-1	Valves	Pressure-retaining bolting greater than and equal to 2 inches diameter	Visual	No
B6.4	B-K-1	Valves	Integrally welded supports	Not Applicable. See Note 11.	No
B6.5	B-K-2	Valves	Support components	Visual	Yes. See Note 9.
B6.6	B-M-1	Valves	Casing welds	Not Applicable. See Note 6.	No

TABLE 1 (Cont'd)

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component Description	Area to be Examined	Method of Examination	Code Relief Requested
B6.7	B-M-2	Valves	Casings	Visual	Yes. See Note 12.
B6.8	B-P	Valves	Exempted compinents	Visual (IWA-5000)	No
B6.9	B-G-2	Valves	Pressure-retaining bolting less than 2 inches	Visual	No

TABLE 1

NOTES

1. Normally during each refueling outage, the reactor vessel closure studs are left in place; therefore, only a volumetric examination will be performed (Table IWB-2600 Item B1.7). If the studs are removed, both a surface and volumetric examination will be performed (Table IWB-2600 Item B1.8).

2. Closure head does not have cladding. Twenty locations on the closure head will be measured to determine the corrosion rate.

3. Six 6 x 6-inch evenly distributed accessible sections of the vessel shell cladding are to be visually examined.

4. At present, piping system pressure boundary bolting greater than or equal to two inches does not exist. If such bolting is introduced, examinations will be performed in accordance with applicable Code requirements.

5. At present, there are no socket welds in ASME Code-affected Class 1 piping systems. If such are introduced, applicable ASME Code examinations will be performed.

6. At present, there are no through-wall casing welds in ASME Class 1 Code-affected pumps or valves. If such are introduced, applicable ASME Code examinations will be performed.

7. 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 or accessibility. Generally, these limitations exist at pipe-to-fitting welds, where examination can be fully performed only from the pipe side, the fitting geometry limiting or even precluding examination from the opposite side. Welds having such restrictions will be examined to the extent practical. However, all welds examined during the pre-service examination were fully code inspectable. Since hangers or other obstructions may have been added after the pre-service exam, examination limitations may be encountered during the performance of the ISI weld examination. Relief will be requested at the time inaccessibility is discovered as provided by 10CFR50.55a(g). 1

8. See Request for Relief, paragraph 2.1.1.

9. See Request for Relief, paragraph 2.1.2.

10. See Request for Relief, paragraph 2.1.5. 1

11. There are no integrally welded valve supports.

12. See Request for Relief, paragraph 2.1.3.

3.0 INSERVICE INSPECTION FOR CODE CLASS 2 COMPONENTS

Table 2 provides a tabulation of the Class 2 pressure-retaining components (and their supports) subject to the inspection requirements of Subsection IWC of Section XI of the ASME Boiler and Pressure Vessel Code, 1974 Edition, and Addenda through Summer 1975. These components will be inspected in accordance with the requirements of Subsection IWC to the extent practical. This tabulation identifies the components to be inspected, the Section XI examination item and category, area to be examined, and the method of examination. Release from the inspection requirements of Subsection IWC is requested where these inspection requirements have been determined to be impractical. Where release is requested, information is provided which identifies the applicable Code requirement, justification for the release request, and the inspection method to be used as an alternative. Table IWC-2600 items not applicable to the Edwin I. Hatch Nuclear Plant-Unit 1 have also been listed and identified in the interest of completeness. Items applicable to pressurized water reactors only have been omitted entirely for brevity.

Article IWC-3000, entitled "Evaluation of Examination Results," is in the course of preparation by the Code committee and is not yet available for use. Therefore, the rules of IWA-3000 will be used with the exception that the evaluation of any indications detected during any inservice examinations will be made, using the acceptance standards for materials and welds specified in the Code under which the specific component was constructed. Some components included in this program were not built to the ASME Section III Code because it was not in effect at the time the component was purchased. However, these components will be inspected in accordance with the requirements of Subsection IWC to the extent practical.

Article IWC-4000, entitled "Repair Procedures," states that the rules of IWB-4000 shall apply. It is considered that the repair procedures outlined in IWA-4000 are appropriate for the components included in this program, and therefore the rules of IWA-4000 will be applied rather than IWB-4000.

The inservice inspection programs described in this section were developed as a result of a design review. Should certain ASME Section XI Code requirements be discovered to be impractical, in the course of inspecting the components, due to unforeseen reasons, Georgia Power Company will submit a request for release from the requirements to the NRC at that time.

Hydrostatic testing will be conducted in a manner that will satisfy the requirements of IWA-5000 and IWC-5000. Where adjoining pipe sections have different test pressures, they will be separated whenever practicable and each section tested at its specified pressure. Where it is not practicable to separate adjoining sections of piping (e.g., boundary is a check valve), the sections will be tested together at the lower of the specified test pressures. No point in the piping will be permitted to experience a pressure greater than the specified test pressure. 1

Components exempted from volumetric and surface examination by IWC-1220 will be hydrostatically tested per the requirements of IWA-5000 and IWC-5000.

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3.1 Requests for Relief From ASME Section XI Requirements

3.1.1 Hydraulic Shock Suppressors

3.1.1.1 Requirement From Which Relief Requested

Table IWC-2520, Category C-E-2, requires visual examination of all support components and verification of support settings for springs and snubbers once per inspection interval. Visual examinations and verification of spring settings will be performed. Relief from the verification of snubber settings is requested.

3.1.1.2 Justification

The hydraulic shock suppressors on Class 2 systems are currently subjected to an ongoing testing program per plant technical specifications. This program is designed to demonstrate the functional integrity of the shock suppressors and exceeds the requirements of Table IWC-2520. 1

3.1.1.3 Testing in Lieu of Section XI Requirements

Hydraulic shock suppressors will be tested in accordance with technical specifications.

3.1.2 HPCI and RCIC Turbine Bolting

3.1.2.1 Requirement From Which Relief Requested

Table IWC-2520, Category C-D, requires examination of pressure-retaining bolting over one inch in diameter.

The closure fasteners for the HPCI pump are studs and cap nuts. The cap nuts completely obscure the studs making an in-place volumetric examination impossible. These studs will receive a surface examination when the pump is disassembled for maintenance. The closure studs for the HPCI and RCIC turbine have rounded ends making an in-place volumetric examination impossible. Relief from inservice examination of these fasteners is requested.

3.1.2.2 Justification

The examination of the obscured stud bolts can be accomplished only by detensioning all bolting in sequence. If this is done the pump (or turbine) cover should be lifted for gasket replacement.

It is anticipated that the pump (and turbine) will require disassembly for maintenance at various times. As the pump/turbine is tested per Section XI, Article IWP, the disassembly for the purpose of examining four studs is not practical.

3.1.2.3 Testing in Lieu of Section XI Requirements

These studs will receive a surface examination when the turbine is disassembled for maintenance.

3.1.3 HPCI and RCIC Valve Bolting

3.1.3.1 Requirement From Which Relief Requested

Table IWC-2520, Category C-D, requires examination of pressure-retaining bolting over one inch in diameter.

The closure studs for the HPCI and RCIC turbine stop and control valves are obscured by cap nuts or have rounded ends making an in-place volumetric examination impossible. Relief from inservice examination of these fasteners is requested.

3.1.3.2 Justification

See Paragraph 3.1.2.2.

3.1.3.3 Testing in Lieu of Section XI Requirements

These bolts will receive a surface examination when the valves are disassembled for maintenance.

TABLE 2
ISI PROGRAM
ASME CODE CLASS 2 COMPONENTS

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component Description	Area to be Examined	Method of Examination	Code Relief Requested
C1.1	C-A	Residual Heat Removal Heat Exchangers	Circumferential butt welds	Volumetric	No
C1.2	C-B	Residual Heat Removal Heat Exchangers	Nozzle-to-vessel welds	Volumetric	No
C1.3	C-C	Residual Heat Removal Heat Exchangers	Integrally welded supports	Surface	No
C1.4	C-D	Residual Heat Removal Heat Exchangers	Pressure-retaining bolting	Visual and either surface or Volumetric	No
C2.1	C-F	Piping	Circumferential butt welds	Volumetric	Yes. See Note 1.
C2.2	C-F	Piping	Longitudinal weld joints in fittings	Not Applicable.	No
C2.2	C-G	Piping	Longitudinal weld joints in fittings	Not Applicable.	No
C2.3	C-F	Piping	Branch pipe-to-pipe weld joints	Volumetric	No
C2.3	C-G	Piping	Branch pipe-to-pipe weld joints	Volumetric	No
C2.4	C-D	Piping	Pressure-retaining bolting	Visual and either surface or Volumetric	No

TABLE 2 (Cont'd)

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component Description	Area to be Examined	Method of Examination	Code Relief Requested
C2.5	C-E-1	Piping	Integrally welded supports	Surface	No
C2.6	C-E-2	Piping	Support components	Visual	Yes. See Note 2.
C3.1	C-F	Pumps	Pump casing welds	Not Applicable. See Note 5.	No
C3.1	C-G	Pumps	Pump casing welds	Not Applicable. See Note 5.	No
C3.2	C-D	Pumps	Pressure-retaining bolting	Visual and either surface or Volumetric	Yes. See Note 3.
C3.3	C-E-1	Pumps	Integrally welded supports	Surface	No
C3.4	C-E-2	Pumps	Support components	Visual	Yes. See Note 2.
C4.1	C-F	Valves	Valve body welds	Not Applicable. See Note 5.	No
C4.1	C-G	Valves	Valve body welds	Not Applicable. See Note 5.	No
C4.2	C-D	Valves	Pressure-retaining bolting	Visual and either surface or Volumetric	Yes. See Note 4.
C4.3	C-E-1	Valves	Integrally welded supports	Surface	No
C4.4	C-E-2	Valves	Support components	Visual	Yes. See Note 2.

TABLE 2

NOTES

1. The arrangement and details of the Class 2 piping systems and components were designed and fabricated before the examination requirements of Section XI of the Code were formalized, and some examinations (as required by IWC-2600) are limited or not practical due to geometric configuration or accessibility. Generally, the limitations exist at all fitting-to-fitting welds such as elbow to tee, elbow to valve, reducer to valve, etc., where geometry and sometimes surface conditions preclude ultrasonic coupling or access for the required scan length. Welds having such restrictions will be examined to the extent practical.

   In instances where the location of pipe supports on hangers restricts the access available for the examination of pipe welds as required by IWC-2600, examinations will be performed to the extent practical unless removal of the support is permissible without unduly stressing the system.

   The results from Hatch Nuclear Plant-Unit No. 2 show that a full code examination can be performed on 98% of the B-J welds, 81% of the B-K-1 welds (Valves & Piping), and 50% of the B-K-1 welds (Pumps). Similar results are expected for Unit 1. 1

   Relief will be requested at the time any weld is found not to be fully Code inspectable as provided by 10CFR50.55a(g).

2. See Request for Relief, paragraph 3.1.1.

3. See Request for Relief, paragraph 3.1.2.

4. See Request for Relief, paragraph 3.1.3.

5. At present, there are no through-wall casing welds in ASME Class 2 pumps or valves. If such welds are introduced, applicable ASME Code examinations will be performed.

4.0 INSERVICE INSPECTION FOR CODE CLASS 3 COMPONENTS

This program consists of the examination areas and the visual examinations required to meet IWD-2000.

The structural integrity of the Safety Class 3 components shall be demonstrated at least once every 40 months during periods of normal reactor operation or during system performance testing by verifying via visual inspection that there is no evidence of unanticipated component leakage, structural distress, or corrosion.

The structural integrity of the Safety Class 3 components shall be demonstrated at least once every ten years by performing system pressure tests at the following test pressures:

1. For closed systems, at least 110 percent of the design pressure.

2. For open storage tanks, at least the nominal hydrostatic pressure developed with the tanks filled to design capacity.

3. Open-ended portions of systems may be exempted from pressure testing.

The structural integrity of the Safety Class 3 components shall be demonstrated at least once every 40 months by verifying via visual inspection that the supports and hangers for piping and components over four inches in diameter show no evidence of inadequate support, unintended restraint, or structural distress.

The following provides further clarification concerning the Class 3 inspection program:

1. Article IWD-3000, entitled "Evaluation of Examination Results," is in the course of preparation by the Code committee and is not yet available for use. Therefore, the rules of IWA-3000 will be used with the exception that the evaluation of any indications detected during any inservice examinations will be made, using the acceptance standards for materials and welds specified in the Code under which the specific component was constructed.

2. Article IWD-4000, entitled "Repair Procedures," states that the rules of IWB-4000 shall apply. It is considered that the repair procedures outlined in IWB-4000 are inappropriate for the components included in this program, and therefore the rules of IWA-4000 will be applied.

3. Inspection of vertical, centrifugal river intake pumps, as required by IWD-2410 (b) and (c), is impractical except at the pump discharge nozzle. Visual inspection of the discharge nozzle will be performed while the pump is operating. Should the pump be pulled for maintenance, the casing will be visually inspected at that time.

4. The designs of the service water systems do not include provision for testing buried piping as required by IWD-2600(b). Visual inspection for leakage at ground level is also impossible for portions which are buried. Normal system functional testing demonstrates leaktight integrity of all buried or encased piping

5. The system pressure testing requirements of IWD-2410 (b) will not be performed on lines two inches and smaller unless:

   (a) They are connected to larger lines which will be pressure tested.

   (b) Isolation valves are not provided so that these smaller lines may be isolated in case of leakage.

   These smaller lines have wall thicknesses in excess of what ASME Section III requires for retaining internal pressure. Using heavier-walled piping in these small lines essentially means they are over-designed for the pressure they are retaining and are not susceptible to the type leakages found during hydrostatic testing. As an alternative, all accessible piping two inches and smaller will be visually inspected under normal operating pressure. 1

6. System pressure testing as required by IWD-2410 (b) is impractical for certain portions of the plant service water system because it operates continuously during all modes of plant operation. This functional operation demonstrates the structural and leaktight integrity of the system. Visual inspection will be performed while the system is under normal operating pressure to verify leaktightness.

7. Where adjoining pipe sections have different test pressures, they will be separated whenever practicable and each section tested at its specified pressure. Where it is not practicable to separate adjoining sections of piping (e.g., boundary is a check valve), the sections will be tested together at the lower of the specified pressures. No point in the piping will be pressurized above the specified test pressure. 1

5.0 INSERVICE TESTING OF PUMPS

The 1974 ASME Section XI Code with Addenda through Summer 1975 requires inservice testing of pumps in accordance with section IWP. The inservice testing program for Class 1, 2, and 3 pumps is described in Table 3. Where full compliance with the requirements of the Code was not possible, an explanation is provided in the table.

5.1 Requests for Relief from ASME Section XI Requirements

5.1.1 Vertical Centrifugal Pumps-Service Water and RHR Service Water Pumps

5.1.1.1 Requirement from Which Relief Is Requested

Article IWP-4310 of Section XI requires the monitoring of all centrifugal pump bearing temperatures. Relief from this requirement is requested for the Service Water and RHR Service Water lower bearings.

5.1.1.2 Justification

Only the upper bearings are accessible; the lower bearings are below the surface of the river. Pump disassembly for bearing inspection is not practical.

5.1.1.3 Testing in Lieu of Section XI Requirements

The lower bearings will be inspected for wear whenever a pump is pulled for maintenance.

5.1.2 Vertical Centrifugal Pumps-RHR and Core Spray Pumps

5.1.2.1 Requirement from Which Relief Is Requested

Article IWP-4310 of Section XI requires the monitoring of all centrifugal pump bearing temperatures. Relief from this requirement is requested for the RHR and Core Spray Pump lower bearings.

5.1.2.2 Justification

There are no true lower bearings in these pumps. Only bearing surfaces exist that are cooled and lubricated by the process water. There are no means to measure bearing temperatures.

5.1.2.3 Testing in Lieu of Section XI Requirements

The bearing surfaces will be examined for wear whenever a pump is pulled for maintenance.

5.1.3 Pump Testing Interval

5.1.3.1 Requirement From Which Relief Requested

Article IWP-3400 requires an inservice test to be run on each pump once per month. It is proposed that the pump inservice testing interval be changed to once per three months.

5.1.3.2 Justification

The intent of the pump testing program is to assure an increased level of plant safety by verifying the operational readiness of each pump. An optimized testing program would assure pump operability and have the least impact on the degradation of the pump and its associated equipment over its service lifetime. Excessive testing downtime jeopardizes pump availability for performance of its safety-related function, causes component wear, and does not increase the level of plant safety.

The Section XI Subgroup for Inservice Testing of pumps and valves has conducted an extensive investigation and analysis of test optimization. Two papers written by W. E. Vesely, Probabilistic Branch, USNRC, provided a basis for changing from a one-month interval to a three-month test interval. As a result, this proposed revision to the Section XI Code has been initiated to change the pump interval to nominally every three months. 1

Since it has been shown by the NRC and the Section XI Subgroup that the three-month pump testing interval provides the plant with an increased level of safety, it is proposed that the Plant Hatch - Unit No. 1 pump testing interval be changed to every three months.

TABLE 3

INSERVICE TESTING PROGRAM FOR
ASME CODE CLASS 1, 2, AND 3 PUMPS

Pump Identification	Pump Description	ASME Code Class	Measured Parameters	Test Interval	Section XI Code Relief Requested
1C41 C001A	Standby liquid control	2	1. Inlet pressure (P_i)	Monthly	No. Note 7 ▌1
1C41 C001B			2. Differential pressure (ΔP)	Monthly	No.
			3. Flow rate (Q)	NA	No. Note 4
			4. Vibration amplitude	Monthly	No. Note 3
			5. Bearing temperature	Annually	No. Note 3
			6. Lubricant level or pressure	Observe Mo.	No.
1E11 C002A	Residual heat removal	2	1. Inlet pressure (P_i)	Monthly	No.
1E11 C002B			2. Differential pressure (ΔP)	Monthly	No. Note 1
1E11 C002C					
1E11 C002D			3. Flow rate (Q)	Monthly	No. Note 1
			4. Vibration amplitude	Monthly	No. Note 3
			5. Bearing temperature	Annually	Yes. Notes 3,8 ▌1
			6. Lubricant level or pressure	Observe Mo.	No. Note 6
1E11 C001A	RHR service water	3	1. Inlet pressure (P_i)	Monthly	No. Note 2 ▌1
1E11 C001B			2. Differential pressure (ΔP)	Monthly	No. Note 1
1E11 C001C					
1E11 C001D			3. Flow rate (Q)	Monthly	No. Note 1
			4. Vibration amplitude	Monthly	No. Note 3
			5. Bearing temperature	Annually	Yes. Notes 3, 5
			6. Lubricant level or pressure	Observe Mo.	No. Note 6

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TABLE 3 (Cont'd)

Pump Identification	Pump Description	ASME Code Class	Measured Parameters	Test Interval	Section XI Code Relief Requested
1E21 C001A	Core spray	2	1. Inlet pressure (P_i)	Monthly	No.
1E21 C001B			2. Differential pressure (ΔP)	Monthly	No. Note 1
			3. Flow rate (Q)	Monthly	No. Note 1
			4. Vibration amplitude	Monthly	No. Note 3
			5. Bearing temperature	Annually	Yes. Notes 3, 8
			6. Lubricant level or pressure	Observe Mo.	No. Note 6
1E21 C002A	Jockey pump	2	1. Inlet pressure (Pi)	Monthly	No Note 9
1E21 C002B			2. Differential pressure (ΔP)	Monthly	No
			3. Flow rate (Q)	NA	No. Note 4
			4. Vibration amplitude	Monthly	No. Note 3
			5. Bearing temperature	Annually	No. Note 3
			6. Lubricant level or pressure	Observe Mo.	No
1P41 C001A	Plant service water	3	1. Inlet pressure (P_i)	Monthly	No. Note 2
1P41 C001B			2. Differential pressure (ΔP)	Monthly	No. Note 1
1P41 C001C			3. Flow rate (Q)	Monthly	No. Note 1
1P41 C001D			4. Vibration amplitude	Monthly	No. Note 3
			5. Bearing temperature	Annually	Yes. Notes 3, 5
			6. Lubricant level or pressure	Observe Mo.	No. Note 6

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TABLE 3 (Cont'd)

Pump Identification	Pump Description	ASME Code Class	Measured Parameters	Test Interval	Section XI Code Relief Requested
1E41 C001	High-pressure coolant injection	2	1. Inlet pressure (P_i)	Monthly	No
			2. Differential pressure (ΔP)	Monthly	No. Note 1
			3. Flow rate (Q)	Monthly	No. Note 1
			4. Vibration amplitude	Monthly	No. Note 3
			5. Bearing temperature	Annually	No
			6. Lubricant level or pressure	Observe Mo.	No
			7. Pump speed	Monthly	No
1E51 C001A	Reactor core isolation cooling	2	1. Inlet pressure (P_i)	Monthly	No
			2. Differential pressure (ΔP)	Monthly	No. Note 1
			3. Flow rate (Q)	Monthly	No. Note 1
			4. Vibration amplitude	Monthly	No. Note 3
			5. Bearing temperature	Annually	No. Note 3
			6. Lubricant level or pressure	Observe Mo.	No
			7. Pump speed	Monthly	No

TABLE 3

NOTES

1. Measurement of both ΔP and Q is not required by ASME Section XI. One of these quantities may be omitted from the test specified by the surveillance procedures.

2. These pumps are vertical design with no means of direct inlet pressure measurement. In lieu of direct measurement, the intake level will be measured. This can then be converted to pump inlet pressure as:

$$\text{Inlet pressure } (P_i) = \frac{114.5 \text{ ft} - \text{Intake Level (ft)}}{2.3066 \text{ (ft/psi)}}$$

3. No instrument is installed on the pump. A portable instrument will be used.

4. No flow instrumentation is installed on this pump. A fixed-resistance test circuit will be used in accordance with footnote 1 of Table IWP-3100-1.

5. See Request for Relief, paragraph 5.1.1.

6. Lubricant level is to be observed for the driver thrust bearing only. The main bearings are lubricated by the pump water.

7. No direct means of measuring pump inlet pressure is available. Pump inlet pressure will be calculated from test tank level.

8. See Request for Relief, paragraph 5.1.2. 1

9. These pumps are normally operating pumps and will not be shut down to measure inlet pressure.

6.0 INSERVICE TESTING OF VALVES

The 1974 ASME Section XI Code with Addenda through Summer 1975 requires inservice testing of valves in accordance with section IWV. The inservice testing program for Class 1, 2, and 3 valves is described in Table 4. Where full compliance with the requirements of the Code was not possible, an explanation is provided in the table.

6.1 Requests for Relief from ASME Section XI Requirements

6.1.1 Requirement from Which Relief Is Requested

IWV-3410(g) and IWV-3520(c) state that when corrective action is required as a result of tests made during cold shutdown, the condition shall be corrected before startup.

6.1.1.1 Justification

Under such conditions startup shall be permitted as provided in the technical specifications.

6.1.2 Requirement from Which Relief Is Requested

IWV-3410(c) states that if an increase in stroke time of 25% or more from the previous test for valves with stroke times greater than ten seconds or 50% or more for valves with stroke times less than or equal to ten seconds is observed, test frequency shall be increased to once each month until corrective action is taken. Relief is requested for valves normally tested during cold shutdown.

6.1.2.1 Justification

Valves that are normally tested during cold shutdown or refueling cannot be tested once each month. Stroking these valves during power operation may place the plant in an unsafe condition.

6.1.2.2 Testing in Lieu of Section XI Requirements

The test frequency shall be increased to once each cold shutdown, not to exceed once each month.

6.1.3 Requirement from which Relief is Requested

IWV-3420(f) requires a permissible leakage rate for each specific Category A valve. Only valves performing a pressure isolation function, as defined in Table 4, note 38, have Section XI permissible leakages.

6.1.3.1 Justification

The plant design is not compatible with checking permissible leakages for specific valves because of the complex piping and valving arrangement; however, the 10CFR50 Appendix J local leak rate testing program for the containment isolation valves has an overall limit of 60% La based on off-site dose calcu-

lations. Since 60% La is an overall limit, the possibility exists that the majority of the containment leakage may leak through one highly degraded valve and be within the 60% La limit. Although the uniformity of leakage through the containment penetrations is relatively unimportant, it is not desirable to have the majority of the containment leakage being emitted through one penetration. The engineering judgement of plant management will be used to determine whether a valve is leaking excessively. Valves which leak excessively will be repaired and retested before being placed into service.

6.1.4 Requirement from which Relief is Requested

IWV-3420(g) requires valves with leakage rates to have corrective action applied to them. Only valves performing a pressure-isolation function, as defined in Table 4, note 38, have Section XI corrective action applied to them.

1

6.1.4.1 Justification

Corrective action per IWV-3420(g) cannot be applied to valves exempted from IWV-3420(f). (See request for relief, paragraph 6.1.3)

6.1.4.2 Corrective Action in Lieu of Section XI Requirements

Except for valves performing a pressure-isolation function, corrective action will consist of the repair of valves judged to be leaking excessively.

6.2 Valves to be Tested During Cold Shutdown and Refueling

Valve testing will commence as soon as possible into the cold shutdown but no later than 48 hours after the shutdown. Valve testing will continue during the shutdown until complete or until plant startup and return to power. Any testing not completed at one cold shutdown will be performed during subsequent cold shutdowns before the next refueling.

During refueling, any valve scheduled for a refueling test will be tested. Also, any valve identified to be tested at cold shutdown that has not been tested during the previous three months will be tested during the refueling.

TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CLASS	TYPE	VALVE DESCRIPTION	COORD. NATES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
B21-F010A	1	AC	18" Check	3-E	H-16062	Feedwater Inboard Containment Isolation	O	Each Refueling Outage	Each Refueling Outage	-	Note 39 Yes. Note 2
B21-F010B	1	AC	18" Check	3-D	H-16062	Feedwater Inboard Containment Isolation	O	Each Refueling Outage	Each Refueling Outage	-	Note 39 Yes. Note 2
B21-F013A	1	C	6" Relief	C-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19
B21-F013B	1	C	6" Relief	C-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19
B21-F013C	1	C	6" Relief	F-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19
B21-F013D	1	C	6" Relief	F-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19
B21-F013E	1	C	6" Relief	F-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19
B21-F013F	1	C	6" Relief	F-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19
B21-F013G	1	C	6" Relief	F-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19
B21-F013H	1	C	6" Relief	G-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19
B21-F013J	1	C	6" Relief	G-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19
B21-F013K	1	C	6" Relief	F-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19
B21-F013L	1	C	6" Relief	F-6	H-16062	Main Steam Relief	-	Note 3	N/A	-	No. Note 19

TABLE 4
INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC XI CATA	VALVE DESCRIPTION	COORDINATES	P&I DWG NO	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
B21-F016	1	A	3" MO Gate	E-8	H-16062	Main Steam Line Drain Inboard Isolation	C	None (Note 53)	Each Refueling Outage	–	Yes. Note 10 Note 39
B21-F019	1	A	3" MO Gate	E-9	H-16062	Main Steam Line Drain Outboard Isolation	C	None (Note 53)	Each Refueling Outage	–	Yes. Note 39
B21-F022A	1	A	24" AO Globe	C-7	H-16062	MSIV	O	Every Three Months	Each Refueling Outage	3-5	No. Note 39
B21-F022B	1	A	24" AO Globe	E-7	H-16062	MSIV	O	Every Three Months	Each Refueling Outage	3-5	No. Note 39
B21-F022C	1	A	24" AO Globe	F-7	H-16062	MSIV	O	Every Three Months	Each Refueling Outage	3-5	No. Note 39
B21-F022D	1	A	24" AO Globe	G-7	H-16062	MSIV	O	Every Three Months	Each Refueling Outage	3-5	No. Note 39
B21-F028A	1	A	24" AO Globe	C-9	H-16062	MSIV	O	Every Three Months	Each Refueling Outage	3-5	No. Note 39
B21-F028B	1	A	24" AO Globe	E-9	H-16062	MSIV	O	Every Three Months	Each Refueling Outage	3-5	No. Note 39
B21-F028C	1	A	24" AO Globe	F-9	H-16062	MSIV	O	Every Three Months	Each Refueling Outage	3-5	No. Note 39
B21-F028D	1	A	24" AO Globe	G-9	H-16062	MSIV	O	Every Three Months	Each Refueling Outage	3-5	No. Note 39
B21-F032A	1	AC	18" Check	E-2	H-16062	Feedwater Outboard Isolation	O	Each Refueling Outage	Each Refueling Outage	–	Yes. Note 39 Note 2
B21-F032B	1	AC	18" Check	D-2	H-16062	Feedwater Outboard Isolation	O	Each Refueling Outage	Each Refueling Outage	–	Yes. Note 39 Note 2
B21-F037A	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	–	Yes. Note 5

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TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEE NOTE DATA	VALVE DESCRIPTION	SYSTEM DIAG.	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
B21-F037B	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	-	Yes. Note 5
B21-F037C	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	-	Yes. Note 5
B21-F037D	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	-	Yes. Note 5
B21-F037E	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	-	Yes. Note 5
B21-F037F	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	-	Yes. Note 5
B21-F037G	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	-	Yes. Note 5
B21-F037H	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	-	Yes. Note 5
B21-F037J	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	-	Yes. Note 5
B21-F037K	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	-	Yes. Note 5
B21-F037L	3	C	6" Check	H-6	H-16062	Vacuum Breaker MSRV Discharge	C	None	N/A	-	Yes. Note 5
B31-F013A	1	AC	3/4" Check	F-3	H-16066	Recirculation Pump Seal Water	O	Each Refueling Outage	Each Refueling Outage	-	Yes. Note 2 Note 40
B31-F013B	1	AC	3/4" Check	F-3	H-16066	Recirculation Pump Seal Water	O	Each Refueling Outage	Each Refueling Outage	-	Yes. Note 2 Note 40
B31-F017A	1	AC	3/4" Check	F-2	H-16066	Recirculation Pump Seal Water	O	Each Refueling Outage	Each Refueling Outage	-	Yes. Note 2 Note 40
B31-F017B	1	AC	3/4" Check	F-2	H-16066	Recirculation Pump Seal Water	O	Each Refueling Outage	Each Refueling Outage	-	Yes. Note 2 Note 40
B31-F019	1	A	3/4" AO Globe	D-3	H-16066	Reactor Sample System Inboard Isolation	O	Every three months	Each Refueling Outage	5	Yes. Note 39

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TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC XI CATG	VALVE DESCRIPTION	COORD NATES	P&I DWG NO	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED	
								EXERCISE (NOTE 1)	LEAKAGE			
B31-F020	1	A	3/4" AO Globe	D-1	H-16066	Reactor Sample System Inboard Isolation	O	Every three months	Each Refueling Outage	5	Yes. Note 39	
B31-F031A	1	B	28" MO Gate	7	H-16066	Reactor Recirculation	O	Cold Shutdown	N/A	40	Yes. Note 52 Note 25	
B31-F031B	1	B	28" MO Gate	H-7	H-16066	Reactor Recirculation	O	Cold Shutdown	N/A	40	Yes. Note 52 Note 25	
C41-F004A	2	D	1-1/2" Expl. Shear	D-3	H-16061	SLC Explosive Actuated	C	Note 4	N/A	-	No	1
C41-F004B	2	D	1-1/2" Expl. Shear	E-3	H-16061	SLC Explosive Actuated	C	Note 4	N/A	-	No	
C41-F006	1	AC	1-1/2" Check	E-2	H-16061	SLC Outboard Containment Isolation	C	Once/18 Months	Each Refueling Outage	-	Note 39 Yes. Note 26	
C41-F007	1	AC	1-1/2" Check	E-2	H-16061	SLC Outboard Containment Isolation	C	Once/18 Months	Each Refueling Outage	-	Note 39 Yes. Note 26	1
C41-F029A	2	C	1" Relief	D-6	H-16061	SLC Pump Discharge Relief Valve	C	Note 3	N/A	-	No. Note 19	
C41-F029B	2	C	1" Relief	G-6	H-16061	SLC Pump Discharge Relief Valve	C	Note 3	N/A	-	No. Note 19	
C41-F033A	2	C	1-1/2" Check	E-5	H-16061	SLC Pump Discharge	C	Note 7	N/A	-	Yes	1
C41-F033B	2	C	1-1/2" Check	G-5	H-16061	SLC Pump Discharge	C	Note 7	N/A	-	Yes	
E11-F003A	2	B	16" MO Gate	D-9	H-16330	RHR Heat Exchanger Shell Side Outlet	O	Every Three Months	N/A	82	No	
E11-F003B	2	B	16" MO Gate	D-4	H-16329	RHR Heat Exchanger Shell Side Outlet	O	Every Three Months	N/A	82	No	
E11-F004A	2	A	24" MO Gate	F-10	H-16330	RHR Pump Suction Torus Isolation	O	Every Three Months	Each Refueling Outage	125	Yes. Note 40	1
E11-F004B	2	A	24" MO Gate	F-3	H-16329	RHR Pump Suction Torus Isolation	O	Every Three Months	Each Refueling Outage	125	Yes. Note 40	1

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TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CLASS	SEC XI CAT A	VALVE DESCRIPTION	COORDINATES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
E11-F004C	2	A	24" MO Gate	F-10	H-16330	RHR Pump Suction Torus Isolation	O	Every Three Months	Each Refueling Outage	125	Yes. Note 40
E11-F004D	2	A	24" MO Gate	F-3	H-16329	RHR Pump Suction Torus Isolation	O	Every Three Months	Each Refueling Outage	125	Yes. Note 40
E11-F006A	2	B	20" MO Gate	F-10	H-16330	RHR Shutdown Cooling Suction	C	Every Three Months	N/A	110	No
E11-F006B	2	B	20" MO Gate	F-2	H-16329	RHR Shutdown Cooling Suction	C	Every Three Months	N/A	110	No
E11-F006C	2	B	20" MO Gate	F-10	H-16330	RHR Shutdown Cooling Suction	C	Every Three Months	N/A	110	No
E11-F006D	2	B	20" MO Gate	F-2	H-16329	RHR Shutdown Cooling Suction	C	Every Three Months	N/A	110	No
E11-F007A	2	A	4" MO Gate	E-7	H-16330	RHR Pump Minimum Flow Torus Isolation	O	Every Three Months	Each Refueling Outage	25	Yes. Note 40 Note 10
E11-F007B	2	A	4" MO Gate	D-5	H-16329	RHR Pump Minimum Flow Torus Isolation	O	Every Three Months	Each Refueling Outage	25	Yes. Note 40 Note 10
E11-F008	1	A	20" MO Gate	D-1	H-16329	RHR Shutdown Cooling Outboard Isolation	C	None (Note 53)	Each Refueling Outage	–	Yes. Note 38
E11-F009	1	A	20" MO Gate	D-1	H-16329	RHR Shutdown Cooling Suction Isolation	C	None (Note 53)	Each Refueling Outage	–	Yes. Note 38
E11-F011A	2	A	4" MO Gate	D-3	H-16330	RHR Condensate Discharge to Torus	C	Every Three Months	Each Refueling Outage	25	Yes. Note 40 Note 10
E11-F011B	2	A	4" MO Gate	C-9	H-16329	RHR Condensate Discharge to Torus	C	Every Three Months	Each Refueling Outage	25	Yes. Note 40 Note 10
E11-F015A	1	A	24" MO Gate	C-8	H-16330	LPCI Outboard Containment Isolation	C	Every Three Months	Each Refueling Outage	24	No. Note 38

Form No. 9-752

Amendment 1 4/79

TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SECT XI CATG	VALVE DESCRIPTION	COORDINATES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
E11-F015B	1	A	24" MO Gate	C-4	H-16329	LPCI Outboard Containment Isolation	C	Every Three Months	Each Refueling Outage	24	No. Note 38
E11-F016A	2	A	16" MO Globe	B-9	H-16330	Containment Spray Outboard Isolation	C	Every Three Months	Each Refueling Outage	10	Yes. Note 40
E11-F016B	2	A	16" MO Globe	B-4	H-16329	Containment Spray Outboard Isolation	C	Every Three Months	Each Refueling Outage	10	Yes. Note 40
E11-F017A	1	B	24" MO Globe	D-8	H-16330	LPCI	O	Every Three Months	N/A	24	No
E11-F017B	1	B	24" MO Globe	D-5	H-16329	LPCI	O	Every Three Months	N/A	24	No
E11-F019	1	C	4" Check	A-1	H-16329	Head Spray	C	Note 6	N/A	-	No
E11-F021A	2	B	16" MO Gate	B-11	H-16330	Containment Spray	C	Every Three Months	N/A	17	No
E11-F021B	2	B	16" MO Gate	B-2	H-16329	Containment Spray	C	Every Three Months	N/A	17	No
E11-F022	1	A	4" MO Gate	A-1	H-16329	Head Spray	C	None (Note 53)	Each Refueling Outage	-	Yes. Note 38
E11-F023	1	A	4" MO Globe	A-2	H-16329	Head Spray Outboard Isolation	C	None (Note 53)	Each Refueling Outage	-	Yes. Note 38
E11-F024A	2	B	16" MO Globe	C-7	H-16330	Suppression Pool Cooling	C	Every Three Months	N/A	110	No
E11-F024B	2	B	16" MO Globe	C-6	H-16329	Suppression Pool Cooling	C	Every Three Months	N/A	110	No
E11-F025A	2	AC	1" Relief	B-8	H-16330	LPCI Injection Containment Isolation	C	Note 3	Each Refueling Outage	-	Yes. Note 40 Note 19

Form No 9 733

TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC. XI CAT.	VALVE DESCRIPTION	COORDINATES	P&I DWG. NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC.)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
E11-F025B	2	AC	1" Relief	C-5	H-16329	LPCI Injection-Containment Isolation	C	Note 3	Each Refueling Outage	-	Yes. Note 40 Note 19
E11-F026A	2	A	4" MO Gate	D-3	H-16330	Condensate Discharge to RCIC - Contain. Isolation	C	Every Three Months	Each Refueling Outage	25	YES. NOTE 40
E11-F026B	2	A	4" MO Gate	D-11	H-16329	Condensate Discharge to RCIC - Contain. Isolation	C	Every Three Months	Each Refueling Outage	25	YES. NOTE 40
E11-F027A	2	B	6" MO Globe	D-3	H-16330	Suppression Pool Spray	C	Every Three Months	N/A	11	No
E11-F027B	2	B	6" MO Globe	D-11	H-16329	Suppression Pool Spray	C	Every Three Months	N/A	11	No
E11-F028A	2	A	16" MO Gate	B-8	H-16330	Suppression Pool Spray Outboard Isolation	C	Every Three Months	Each Refueling Outage	25	No
E11-F028B	2	A	16" MO Gate	B-5	H-16329	Suppression Pool Spray Outboard Isolation	C	Every Three Months	Each Refueling Outage	25	No
E11-F029	2	AC	1" Relief	E-2	H-16329	RHR Pump Suction-Containment Isolation	C	Note 3	Each Refueling Outage	-	Yes. Note 40 Note 19
E11-F030A	2	AC	1" Relief	F-9	H-16330	RHR Pump Suction-Containment Isolation	C	Note 3	Each Refueling Outage	-	Yes. Note 40 Note 19
E11-F030B	2	AC	1" Relief	F-4	H-16329	RHR Pump Suction-Containment Isolation	C	Note 3	Each Refueling Outage	-	Yes. Note 40 Note 19
E11-F030C	2	AC	1" Relief	F-11	H-16330	RHR Pump Suction-Containment Isolation	C	Note 3	Each Refueling Outage	-	Yes. Note 40 Note 19
E11-F030D	2	AC	1" Relief	F-1	H-16329	RHR Pump Suction-Containment Isolation	C	Note 3	Each Refueling Outage	-	Yes. Note 40 Note 19
E11-F031A	2	C	20" Check	H-6	H-16330	RHR Pump Discharge	C	Note 29	N/A	-	Yes
E11-F031B	2	C	20" Check	H-6	H-16329	RHR Pump Discharge	C	Note 29	N/A	-	Yes
E11-F031C	2	C	20" Check	H-10	H-16330	RHR Pump Discharge	C	Note 29	N/A	-	Yes
E11-F031D	2	C	20" Check	H-2	H-16329	RHR Pump Discharge	C	Note 29	N/A	-	Yes
E11-F046A	2	C	3" Check	H-7	H-16330	RHR Minimum Flow Line	C	Every Three Months (Note 29)	N/A	-	No

TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC XI CAT	VALVE DESCRIPTION	COORD NATES	P & I DWG NO	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED	
								EXERCISE (NOTE 1)	LEAKAGE			
E11-F046B	2	C	3" Check	H-5	H-16329	RHR Minimum Flow Line	C	Every Three Months (Note 29)	N/A	-	No	
E11-F046C	2	C	3" Check	H-11	H-16330	RHR Minimum Flow Line	C	Every Three Months (Note 29)	N/A	-	No	1
E11-F046D	2	C	3" Check	H-2	H-16329	RHR Minimum Flow Line	C	Every Three Months (Note 29)	N/A	-	No	
E11-F047A	2	B	16" MO Gate	E-6	H-16330	RHR Heat Exchanger Shell Side Inlet	O	Every Three Months	N/A	82	No	
E11-F047B	2	B	16" MO Gate	E-7	H-16329	RHR Heat Exchanger Shell Side Inlet	O	Every Three Months	N/A	82	No	
E11-F048A	2	B	24" MO Globe	B-8	H-16330	RHR Heat Exchanger Shell Side Bypass	O	Every Three Months	N/A	175	No	1
E11-F048B	2	B	24" MO Globe	B-5	H-16329	RHR Heat Exchanger Shell Side Bypass	O	Every Three Months	N/A	175	No	
E11-F050A	1	AC	24" AO Check	D-6	H-16330	LPCI Injection Isolation	C	Cold Shutdown	Each Refueling Outage	-	Yes. Note 38 No. Note 22	
E11-F050B	1	AC	24" AO Check	D-7	H-16329	LPCI Injection Isolation	C	Cold Shutdown	Each Refueling Outage	-	Yes. Note 38 No. Note 22	1
E11-F055A	2	AC	4" Relief	D-6	H-16330	Contain. RHR Heat Exchanger Shell Relief-Isolation	C	Note 3	Each Refueling Outage	-	Yes. Note 40 No. Note 19	
E11-F055B	2	AC	4" Relief	D-7	H-16329	Contain. RHR Heat Exchanger Shell Relief-Isolation	C	Note 3	Each Refueling Outage	-	Yes. Note 40 No. Note 19	1
E11-F065A	2	B	24" AO Butterfly	E-10	H-16330	RHR Torus Suction	O	Every Three Months	N/A	12	No	1
E11-F065B	2	B	24" AO Butterfly	E-2	H-16329	RHR Torus Suction	O	Every Three Months	N/A	12	No	1

TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC XI CATA	VALVE DESCRIPTION	COORDINATES	P & I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED	
								EXERCISE (NOTE 1)	LEAKAGE			
E11-F065C	2	B	24" AO Butterfly	E-10	H-16330	RHR Torus Suction	O	Every Three Months	N/A	12	No	
E11-F065D	2	B	24" AO Butterfly	E-2	H-16329	RHR Torus Suction	O	Every Three Months	N/A	12	No	1
E11-F078A	2	C	10" Check	H-6	H-16330	RHR Heat Exchanger Service Water Intertie	C	NOTE 54	N/A	-	YES. NOTE 54	
E11-F078B	2	C	10" Check	D-9	H-16329	RHR Heat Exchanger Service Water Intertie	C	NOTE 54	N/A	-	YES. NOTE 54	
E11-F091A	2	B	6" MO Globe	E-2	H-16330	Steam Line to RHR Heat Exchanger Shutdown	C	Every Three Months	N/A	65	No	
E11-F091B	2	B	6" MO Globe	E-11	H-16329	Steam Line to RHR Heat Exchanger Shutdown	C	Every Three Months	N/A	65	No	
E11-F097	2	AC	3" Relief	D-11	H-16329	Steam Supply Relief-Containment Isolation	C	Note 3	Each Refueling Outage	-	Yes. Note 40 (See Note 19)	
E11-F103A	2	A	1" MO Globe	E-5	H-16330	RHR Heat Exchanger Vent - Containment Isolation	C	Every Three Months	Each Refueling Outage	15	Yes. Note 40	1
E11-F103B	2	A	1" MO Globe	E-8	H-16329	RHR Heat Exchanger Vent - Containment Isolation	C	Every Three Months	Each Refueling Outage	15	Yes. Note 40	
E11-F140A	2	B	6" MO Gate	E-2	H-16330	Steam Line to RHR Heat Exchanger Shutdown	C	Every Three Months	N/A	35	No	
E11-F140B	2	B	6" MO Gate	E-11	H-16329	Steam Line to RHR Heat Exchanger Shutdown	C	Every Three Months	N/A	35	No	
E11-F068A	3	B	10" MO Ball	H-6	H-16330	RHR Heat Exchanger Service Water Discharge	C	Every Three Months (Note 28)	N/A	-	No	
E11-F068B	3	B	10" MO Ball	H-7	H-16329	RHR Heat Exchanger Service Water Discharge	C	Every Three Months (Note 28)	N/A	-	No	1

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TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC XI CATA	VALVE DESCRIPTION	COORDINATES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUEST
								EXERCISE (NOTE 1)	LEAKAGE		
E11-F073A	2	B	10" MO Gate	G-4	H-16330	RHR Service Water Intertie	C	Every Three Months	N/A	60	No
E11-F073B	2	B	10" MO Gate	G-9	H-16329	RHR Service Water Intertie	C	Every Three Months	N/A	60	No
E11-F075A	2	B	10" MO Gate	G-4	H-16330	RHR Service Water Intertie	C	Every Three Months	N/A	60	No
E11-F075B	2	B	10" MO Gate	G-9	H-16329	RHR Service Water Intertie	C	Every Three Months	N/A	60	No
E11-F119A	3	B	18" MO Gate	H-4	H-16330	RHR Service Water Train A & B Cross	C	Every Three Months	N/A	110	No
E11-F119B	3	B	18" MO Gate	H-9	H-16329	RHR Service Water Train A & B Cross	C	Every Three Months	N/A	110	No
E11-F200A	3	B	2" AO PCV	-	D-11004	RHR Service Water Pump Minimum Flow	C	Note 9	N/A	-	No
E11-F200B	3	B	2" AO PCV	-	D-11004	RHR Service Water Pump Minimum Flow	C	Note 9	N/A	-	No
E11-F200C	3	B	2" AO PCV	-	D-11004	RHR Service Water Pump Minimum Flow	C	Note 9	N/A	-	No
E11-F200D	3	B	2" AO PCV	-	D-11004	RHR Service Water Pump Minimum Flow	C	Note 9	N/A	-	No
E11-L001A	3	B	1/2" Solenoid	-	D-11004	RHR Service Water Pump Cooling	C	Note 48	N/A	-	No

Form No 9-793

TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CLASS	CAT.	VALVE DESCRIPTION	LOCATION NOTES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
E11-L001E	3	B	1/2" Solenoid	-	D-11004	RHR Service Water Pump Cooling	C	Note 48	N/A	-	No
E11-L001C	3	B	1/2" Solenoid	-	D-11004	RHR Service Water Pump Cooling	C	Note 48	N/A	-	No
E11-L001D	3	B	1/2" Solenoid	-	D-11004	RHR Service Water Pump Cooling	C	Note 48	N/A	-	No
E21-F001A	2	A	20" MO Gate	H-8	H-16331	Core Spray Pump Torus Suction Outboard Isolation	O	Every Three Months	Each Refueling Outage	100	Yes. Note 40
E21-F001B	2	A	20" MO Gate	J-8	H-16331	Core Spray Pump Torus Suction Outboard Isolation	O	Every Three Months	Each Refueling Outage	100	Yes. Note 40
E21-F003A	2	C	12" Check	F-9	H-16331	Core Spray Pump Discharge	C	Note 30	N/A	-	Yes
E21-F003B	2	C	12" Check	F-11	H-16331	Core Spray Pump Discharge	C	Note 30	N/A	-	Yes
E21-F004A	1	B	10" MO Gate	E-7	H-16331	Core Spray Outboard Injection	O	Every Three Months	N/A	50	No
E21-F004B	1	B	10" MO Gate	B-7	H-16331	Core Spray Outboard Injection	O	Every Three Months	N/A	50	No
E21-F005A	1	A	10" MO Gate	E-6	H-16331	Core Spray Outboard Containment Isolation	C	Every Three Months	Each Refueling Outage	50	No. Note 38
E21-F005B	1	A	10" MO Gate	B-6	H-16331	Core Spray Outboard Containment Isolation	C	Every Three Months	Each Refueling Outage	50	No. Note 38
E21-F006A	1	AC	10" AO Check	D-4	H-16331	Core Spray Injection	C	Cold Shutdown	Each Refueling Outage	-	Yes. Note 22
E21-F006B	1	AC	10" AO Check	C-4	H-16331	Core Spray Injection	C	Cold Shutdown	Each Refueling Outage	-	Yes. Note 22
E21-F012A	2	C	2" Relief	D-9	H-16331	Core Spray Pump Discharge Relief	C	Note 3	N/A	-	No. Note 19
E21-F012B	2	C	2" Relief	B-9	H-16331	Core Spray Pump Discharge Relief	C	Note 3	N/A	-	No. Note 19

Form No. 3733

TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CLASS	TEST METHOD	VALVE DESCRIPTION	LOCATION (GRID)	P&I DIAG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
E21-F015A	2	A	10" MO Globe	D-8	H-16331	Core Spray Test Bypass Containment Isolation	C	Every Three Months	Each Refueling Outage	54	Yes. Note 40
E21-F015B	2	A	10" MO Globe	C-8	H-16331	Core Spray Test Bypass Containment Isolation	C	Every Three Months	Each Refueling Outage	54	Yes. Note 40
E21-F019A	2	B	20" AO Butterfly	J-6	H-16331	Core Spray Pump Torus Suction	O	Every Three Months	N/A	22	No
E21-F019B	2	B	20" AO Butterfly	K-6	H-16331	Core Spray Pump Torus Suction	O	Every Three Months	N/A	22	No
E21-F031A	2	B	3" MO Gate	F-9	H-16331	Core Spray Pump Minimum Flow	O	Every Three Months	N/A	20	No
E21-F031B	2	B	3" MO Gate	F-10	H-16331	Core Spray Pump Minimum Flow	O	Every Three Months	N/A	20	No
E21-F036A	2	AC	3" Check	E-9	H-16331	Core Spray Test Line - Containment Isolation	C	N/A	N/A	-	Yes. Note 21
E21-F036B	2	AC	3" Check	E-10	H-16331	Core Spray Test Line - Containment Isolation	C	N/A	N/A	-	Yes. Note 21
E41-F001	2	B	10" MO Gate	E-12	H-16332	HPCI Steam Supply Shutoff	C	Every Three Months	N/A	50	No
E41-F002	1	A	10" MO Gate	C-2	H-16332	HPCI Steam Supply Inboard Isolation	O	Every Three Months	Each Refueling Outage	50	Note 39 Yes. Note 14
E41-F003	1	A	10" MO Gate	C-4	H-16332	HPCI Steam Supply Outboard Isolation	O	Every Three Months	Each Refueling Outage	50	Yes. Note 39

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TABLE 4
INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC XI CATG	VALVE DESCRIPTION	COORDINATES	P&I DWG NO	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
E41-F004	2	B	16" MO Gate	D-9	H-16332	HPCI Pump Suction from Condensate Storage	O	Every Three Months	N/A	60	No
E41-F005	2	C	14" Check	F-6	H-16332	HPCI Pump Discharge	C	Note 31	N/A	-	Yes
E41-F006	2	A	14" MO Gate	E-5	H-16332	HPCI Pump Inboard Discharge Isolation	C	Cold Shutdown	Each Refueling Outage	50	Note 38 No. Note 51
E41-F007	2	B	14" MO Gate	E-6	H-16332	HPCI Pump Outboard Discharge	O	Cold Shutdown	N/A	50	Yes. Note 39 Note 51
E41-F008	2	A	10" MO Globe	D-7	H-16332	HPCI Pump Test Bypass Isolation	C	Every Three Months (Note 46)	Each Refueling Outage	-	Yes. Note 40
E41-F011	2	B	10" MO Gate	C-7	H-16332	HPCI Pump Redundant Shutoff to Condensate Storage	C	Every Three Months	N/A	60	No
E41-F012	2	A	4" MO Gate	F-7	H-16332	HPCI Pump Minimum Flow Inboard Isolation	C	Every Three Months (Note 47)	Each Refueling Outage	-	Yes. Note 10
E41-F019	2	C	16" Check	D-9	H-16332	HPCI Pump Suction from Condensate Storage	C	Note 31	N/A	-	Yes
E41-F021	2	AC	12" Stop Check	G-3	H-16332	HPCI Turbine Exhaust-Inboard Isolation	O	Note 31	Each Refueling Outage	-	Note 40 Yes. Note 16
E41-F022	2	AC	2" Stop Check	G-4	H-16332	HPCI Turbine Exhaust Drain-Torus Isolation	O	Note 31	Each Refueling Outage	-	Note 40 Yes. Note 16
E41-F035	2	B	2" AO PCV	G-8	H-16333	HPCI Turbine Lube Oil Cooling	C	Note 9	N/A	-	No
E41-F040	2	AC	2" Check	G-5	H-16332	HPCI Turbine Exhaust Drain-Torus Isolation	C	Every Three Months (Note 31)	Each Refueling Outage	-	Yes. Note 40
E41-F041	2	B	16" MO Gate	D-8	H-16332	HPCI Pump Suction Shutoff	C	Every Three Months	N/A	70	No
E41-F042	2	A	16" MO Gate	J-5	H-16332	HPCI Pump Suction Torus Outboard Isolation	C	Every Three Months	Each Refueling Outage	70	Yes. Note 40
E41-F045	2	C	16" Check	J-7	H-16332	HPCI Pump Suction	C	Note 31	N/A	-	Yes
E41-F046	2	AC	4" Check	F-8	H-16332	HPCI Pump Minimum Flow Outboard Isolation	C	Every Three Months (Note 31)	Each Refueling Outage	-	Yes. Note 40

Form No 9.793

TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	GROUP CLASS	SEC XI CAT.	VALVE DESCRIPTION	COORD. NATES	P&I DWG. NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
E41-F049	2	AC	20" Check	G-4	H-16332	HPCI Turbine Exhaust Outboard Isolation	C	Every Three Months (Note 31)	Each Refueling Outage	-	No
E41-F051	2	A	16" AO Butterfly	J-4	H-16332	HPCI Pump Suction Torus Inboard Isolation	O	Every Three Months	Each Refueling Outage	16	Yes. Note 10
E41-F059	2	B	2" MO Globe	F-8	H-16333	HPCI Turbine Lube Oil Cooling	C	Every Three Months	N/A	17	No
E41-F104	2	A	2" MO Gate	G-3	H-16332	HPCI Vacuum Relief Outboard Torus Isolation	O	Every Three Months	Each Refueling Outage	20	Yes. Note 40
E41-F111	2	A	2" MO Gate	G-2	H-16332	HPCI Vacuum Relief Inboard Torus Isolation	O	Every Three Months	Each Refueling Outage	20	Yes. Note 40 Note 10
E51-F001	2	AC	10" Stop Check	G-5	H-16334	RCIC Turbine Exhaust to Torus Isolation	C	Every Three Months	Each Refueling Outage	-	Yes. Note 40 Note 16
E51-F002	2	AC	2" Stop Check	G-6	H-16334	RCIC Vacuum Pump Discharge to Torus Isolation	C	Every Three Months	Each Refueling Outage	-	Yes. Note 40 Note 16
E51-F003	2	A	6" AO Butterfly	J-6	H-16334	RCIC Pump Suction - Torus Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40 Note 14
E51-F007	1	A	4" MO Gate	C-5	H-16334	RCIC Steam Supply Inboard Isolation	O	Every Three Months	Each Refueling Outage	20	Yes. Note 39 Note 10
E51-F008	1	A	4" MO Gate	C-6	H-16334	RCIC Steam Supply Outboard Isolation	O	Every Three Months	Each Refueling Outage	20	Yes. Note 39
E51-F013	2	A	4" MO Gate	E-6	H-16334	RCIC Feedwater Injection	C	Every Three Months	Each Refueling Outage	20	No. Note 38
E51-F019	2	A	2" MO Globe	F-7	H-16334	RCIC Pump Minimum Flow-Torus Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40 Note 10
E51-F021	2	AC	2" Check	F-8	H-16334	RCIC Pump Minimum Flow-Torus Isolation	C	Every Three Months (Note 33)	Each Refueling Outage	-	Yes. Note 40

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TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CLASS	CAT.	VALVE DESCRIPTION	COORDINATES	P&I DIAGRAM	FUNCTION	NORMAL POSITION	TEST FREQUENCY		FAILURE TIME (SEC)	SECTION XI CODE RELIEF REQUEST
								EXERCISE (NOTE 1)	LEAKAGE		
E51-F028	2	AC	2" Check	G-7	H-16334	RCIC Vacuum Pump Discharge-Torus Isolation	C	Every Three Months (Note 33)	Each Refueling Outage	-	Yes. Note 40
E51-F031	2	A	6" MO Gate	J-6	H-16334	RCIC Pump Suction-Torus Isolation	O	Every Three Months	Each Refueling Outage	35	Yes. Note 40
E51-F040	2	AC	10" Check	G-5	H-16334	RCIC Turbine Exhaust-Torus Isolation	C	Every Three Months (Note 33)	Each Refueling Outage	-	Yes. Note 40
E51-F104	2	A	1-1/2" MO Gate	G-5	H-16334	RCIC Vacuum Breaker-Torus Isolation	O	Every Three Months	Each Refueling Outage	25	Yes. Note 40
E51-F105	2	A	1-1/2" MO Gate	G-5	H-16334	RCIC Vacuum Breaker-Torus Isolation	O	Every Three Months	Each Refueling Outage	25	Note 40 Yes. Note 10
G11-F003	2	A	3" AO Gate	B-3	H-16176	Drywell Floor Drains-Containment Isolation	O	Every Three Months	Each Refueling Outage	15	Yes. Note 40
G11-F004	2	A	3" AO Gate	B-3	H-16176	Drywell Floor Drains-Containment Isolation	O	Every Three Months	Each Refueling Outage	15	Yes. Note 40
G11-F019	2	A	3" AO Gate	E-3	H-16176	Drywell Equipment Drains - Containment Isolation	O	Every Three Months	Each Refueling Outage	15	Yes. Note 40
G11-F020	2	A	3" AO Gate	E-4	H-16176	Drywell Equipment Drains - Containment Isolation	O	Every Three Months	Each Refueling Outage	15	Yes. Note 40
G31-F001	1	A	6" MO Gate	B-2	H-16188	RWCU Pump Suction-Inboard Isolation	O	Every Three Months	Each Refueling Outage	30	Yes. Note 39
G31-F004	1	A	6" MO Gate	B-3	H-16188	RWCU Pump Suction-Outboard Isolation	O	Every Three Months	Each Refueling Outage	30	Yes. Note 39
G31-F039	1	A	4" Check	A-5	H-16188	RWCU Discharge Isolation	O	Each Refueling Outage	Each Refueling Outage	-	Yes. Note 39 Note 2
G41- F009A	3	B	6" Manual Butterfly	D-11	H-16002	FPCCU Discharge to Skimmer Surge Tank	O	Every Three Months	N/A	-	No
G41- F009B	3	B	6" Manual Butterfly	D11	H-16002	FPCCU Discharge to Skimmer Surge Tank	O	Every Three Months	N/A	-	No

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TABLE 4
INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC XI CATA	VALVE DESCRIPTION	COORD NATES	P&I DWG NO	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME SEC	SECTION XI CODE RELIEF REQUEST
								EXERCISE (NOTE 1)	LEAKAGE		
G41-F002A	3	B	6" Manual Butterfly	F-2	H-16002	FPCCU Pump Suction	O	Every Three Months	N/A	-	No
G41-F002B	3	B	6" Manual Butterfly	H-2	H-16002	FPCCU Pump Suction	O	Every Three Months	N/A	-	No
G41-F019A	3	B	6" Manual Gate	D-9	H-16002	FPCCU Inlet From RHR	C	Every Three Months	N/A	-	No
G41-F019B	3	B	6" Manual Gate	D-9	H-16002	FPCCU Inlet from RHR	C	Every Three Months	N/A	-	No
G41-F020A	3	B	6" Manual Gate	D-11	H-16002	FPCCU Return to RHR	C	Every Three Months	N/A	-	No
G41-F020B	3	B	6" Manual Gate	D-11	H-16002	FPCCU Return to RHR	C	Every Three Months	N/A	-	No
P21-F353	2	AE	2" Manual Gate	F-7	H-160	[illegible]ralizer Water-Containment Isolation	LC	Note 53	Each Refueling Outage	-	Yes. Note 40
P21-F406	2	AE	2" Manual Gate	[illegible]		Demineralizer Water-Containment Isolation	LC	Note 53	Each Refueling Outage	-	Yes. Note 40
P33-F002	2	A	1" [illegible] Control	B-4	H-16276	H_2 & O_2 Analyzer Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P33-F003	2	A	1" AO Control	D-4	H-16276	H_2 & O_2 Analyzer Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P33-F004	2	A	1" AO Control	E-4	H-16276	H_2 & O_2 Analyzer Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P33-F006	2	A	1" AO Control	G-4	H-16276	H_2 & O_2 Analyzer Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P33-F007	2	A	1" AO Control	H-4	H-16276	H_2 & O_2 Analyzer Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40

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TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	CAT.	VALVE DESCRIPTION	REMARKS NOTES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
P33-F010	2	A	1" AO Control	B-5	H-16276	H_2 & O_2 Analyzer Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P33-F011	2	A	1" AO Control	G-5	H-16276	H_2 & O_2 Analyzer Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P33-F012	2	A	1" AO Control	E-5	H-16276	H_2 & O_2 Analyzer Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P33-F014	2	A	1" AO Control	G-5	H-16276	H_2 & O_2 Analyzer Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P33-F015	2	A	1" AO Control	H-5	H-16276	H_2 & O_2 Analyzer Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P41-F023A	3	C	2" Check	A-10	H-16011	CRD Pump Room Cooler	O	Note 32	N/A	-	Yes
P41-F023B	3	C	2" Check	B-10	H-16011	CRD Pump Room Cooler	O	Note 32	N/A	-	Yes
P41-F024A	3	C	1-1/2" Check	B-8	H-16011	HPCI Pump Room Cooler	C	Note 18	N/A	-	Yes
P41-F024B	3	C	1-1/2" Check	C-8	H-16011	HPCI Pump Room Cooler	C	Note 18	N/A	-	Yes
P41-F025A	3	C	3" Check	D-8	H-16011	RHR and CS Pump Room Cooler	C	Note 34	N/A	-	Yes
P41-F025B	3	C	3" Check	D-8	H-16011	RHR and CS Pump Room Cooler	C	Note 34	N/A	-	Yes
P41-F026A	3	C	3" Check	G-7	H-16011	RHR Pump Cooler	C	Note 34	N/A	-	Yes
P41-F026B	3	C	3" Check	G-7	H-16011	RHR Pump Cooler	C	Note 34	N/A	-	Yes

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC XI CATA	DESCRIPTION	COORD NATES	P&I DWG NO	FUNCTION	NORMAL POSITION	TEST FREQUENCY		REMARKS	SECTION XI TEST REQUIREMENTS
								EXERCISE (TEST 1)	LEAKAGE		
P41-F028A	3	C	1-1/2" Check	G-2	H-16011	RCIC Pump Room Cooler	C	Note 35	N/A	-	Yes
P41-F028B	3	C	1-1/2" Check	G-3	H-16011	RCIC Pump Room Cooler	C	Note 35	N/A	-	Yes
P41-F035A	3	B	2" AO Globe	B-9	H-16011	HPCI Pump Room Cooler	C	Note 41	N/A	-	No
P41-F035B	3	B	2" AO Globe	C-9	H-16011	HPCI Pump Room Cooler	C	Note 41	N/A	-	No
P41-F036A	3	B	3" AO Globe	D-9	H-16011	RHR and CS Pump Room Cooler	C	Note 42	N/A	-	No
P41-F036B	3	B	3" AO Globe	D-9	H-16011	RHR and CS Pump Room Cooler	C	Note 42	N/A	-	No
P41-F037A	3	B	1-1/2" AO Globe	H-8	H-16011	RHR Pump Cooler	C	Note 44	N/A	-	No
P41-F037B	3	B	1-1/2" AO Globe	E-9	H-16011	RHR Pump Cooler	C	Note 44	N/A	-	No
P41-F037C	3	B	1-1/2" AO Globe	J-8	H-16011	RHR Pump Cooler	C	Note 44	N/A	-	No
P41-F037D	3	B	1-1/2" AO Globe	E-9	H-16011	RHR Pump Cooler	C	Note 44	N/A	-	No

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INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NO.	CODE CLASS	SEC XI CATG.	VALVE DESCRIPTION	NOTES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUEST(S)
								EXERCISE (NOTE 1)	LEAKAGE		
P41-F039A	3	B	3" AO Globe	G-8	H-16011	RHR Pump Cooler	C	Note 42	N/A	-	No
P41-F039B	3	B	3" AO Globe	G-8	H-16011	RHR Pump Cooler	C	Note 42	N/A	-	No
P41-F040A	3	B	2" AO Globe	H-2	H-16011	RCIC Pump Room Cooler	C	Note 43	N/A	-	No
P41-F040B	3	B	2" AO Globe	H-3	H-16011	RCIC Pump Room Cooler	C	Note 43	N/A	-	No
P41-F042A	3	B	3" AO Globe	A-10	H-16011	CRD Pump Room Cooler	O	Note 32	N/A	-	No
P41-F042B	3	B	3" AO Globe	B-10	H-16011	CRD Pump Room Cooler	O	Note 32	N/A	-	No
P41-F049	2	A	8" MO Gate	F-6	H-16011	Drywell Air Coolers-Isolation	O	Note 52	Each Refueling Outage	55	Yes. Note 40 Note 24
P41-F050	2	A	8" MO Gate	D-2	H-16011	Drywell Air Coolers-Isolation	O	Note 52	Each Refueling Outage	55	Yes. Note 40 Note 24
P41-F064	3	C	6" Check	F-10	H-16011	Division I Supply	O	Note 36	N/A	-	No
P41-F065	3	C	8" Check	G-10	H-16011	Division II Supply	O	Note 37	N/A	-	No
P41-F208A	3	B	3" AO PCV	-	D-11001	Service Water Pressure Regulator	C	Every Three Months (Note 9)	N/A	-	No
P41-F208B	3	B	3" AO PCV	-	D-11001	Service Water Pressure Regulator	C	Every Three Months (Note 9)	N/A	-	No
P41-F208C	3	B	3" AO PCV	-	D-11001	Service Water Pressure Regulator	C	Every Three Months (Note 9)	N/A	-	No
P41-F208D	3	B	3" AO PCV	-	D-11001	Service Water Pressure Regulator	C	Every Three Months (Note 9)	N/A	-	No
P41-F310A	3	B	30" MO Butterfly	-	D-11001	Turbine Building Supply Shutoff	O	Cold Shutdown	N/A	Note 27	Yes. Note 52 Note 24
P41-F310B	3	B	30" MO Butterfly	-	D-11001	Turbine Building Supply Shutoff	O	Cold Shutdown	N/A	Note 27	Yes. Note 52 Note 24

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INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC XI CATA.	VALVE DESCRIPTION	COORDINATES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
P41-F310C	3	B	30" MO Butterfly	-	D-11001	Turbine Building Supply Shutoff	O	Cold Shutdown	N/A	Note 27	Yes. Note 52 Note 24
P41-F310D	3	B	30" MO Butterfly	-	D-11001	Turbine Building Supply Shutoff	O	Cold Shutdown	N/A	Note 27	Yes. Note 52 Note 24
P41-L003A	3	B	1" Solenoid	-	D-11001	Service Water Pump - Cooling Shutoff	C	Every Three Months (Note 48)	N/A	-	No
P41-L003B	3	B	1" Solenoid	-	D-11001	Service Water Pump - Cooling Shutoff	C	Every Three Months (Note 48)	N/A	-	No
P41-L003C	3	B	1" Solenoid	-	D-11001	Service Water Pump - Cooling Shutoff	C	Every Three Months (Note 48)	N/A	-	No
P41-L003D	3	B	1" Solenoid	-	D-11001	Service Water Pump - Cooling Shutoff	C	Every Three Months (Note 48)	N/A	-	No
P42-F051	2	A	4" MO Gate	B-9	H-16009	RBCCW to Recirculation Pump Containment Isolation	O	Full-Cold Shut.	Each Refueling Outage	35	Yes. Note 40 No. Note 52
P42-F052	2	A	4" MO Gate	E-9	H-16009	RBCCW to Recirculation Pump Containment Isolation	O	Full-Cold Shut.	Each Refueling Outage	35	Yes. Note 40 No. Note 52
P51-F513	2	AE	2" Manual Globe	F-3	H-16013	Service Air Containment Isolation	LC	Note 53	Each Refueling Outage	-	YES. NOTE 40
P51-F514	2	AE	2" Manual Globe	F-3	H-16013	Service Air Containment Isolation	LC	Note 53	Each Refueling Outage	-	YES. NOTE 40

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TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC. XI CATG.	VALVE DESCRIPTION	COORD. NATES	P&I DWG. NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
P70-F002	2	A	1" AO Control	F-8	H-16286	Drywell Pneumatic Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P70-F003	2	A	1" AO Control	F-8	H-16286	Drywell Pneumatic Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P70-F004	2	A	2" AO Control	C-8	H-16286	Drywell Pneumatic Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P70-F005	2	A	2" AO Control	D-8	H-16286	Drywell Pneumatic Containment Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
P70-F020	2	AC	2" Check	C-7	H-16286	Drywell Pneumatic Containment Isolation	O	Each Refueling Outage	Each Refueling Outage	-	Note 2 Yes. Note 40
T46-F001A	3	B	18" AO Butterfly	C-1	H-16020	Filter Bed Inlet from Reactor Building	C	Every Three Months	N/A	-	No
T46-F001B	3	B	18" AO Butterfly	G-1	H-16020	Filter Bed Inlet from Reactor Building	C	Every Three Months	N/A	-	No
T48-F103	2	A	6" AO Butterfly	F-2	H-16000	Drywell & Torus Supply - Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F104	2	A	1" AO Control	G-4	H-16000	Drywell & Torus Makeup-Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F113	2	A	2" AO Control	F-7	H-16000	Drywell Inerting Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F114	2	A	2" AO Control	F-8	H-16000	Drywell Inerting Inboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F115	2	A	2" AO Control	G-7	H-16000	Torus Inerting Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F116	2	A	2" AO Control	G-8	H-16000	Torus Inerting Inboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40

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TABLE 4
INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CLASS	SEC XI DATA	VALVE DESCRIPTION	COORD NATES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 3)	LEAKAGE		
T48-F118A	2	A	1" Solenoid	G-5	H-16000	Torus Makeup Inboard Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F118B	2	A	1" Solenoid	G-5	H-16000	Torus Makeup Inboard Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F321	2	A	2" AO Control	J-7	H-16000	Drywell Inerting Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F322	2	A	2" AO Control	J-8	H-16000	Drywell Inerting Inboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F325	2	A	2" AO Control	H-7	H-16000	Torus Inerting Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F327	2	A	2" AO Control	H-8	H-16000	Torus Inerting Inboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F307	2	A	18" AO Butterfly	C-9	H-16024	Drywell Purge Inlet-Inboard Isolation	C	None	Each Refueling Outage	–	Note 53 Yes. Note 40
T48-F308	2	A	18" AO Butterfly	C-10	H-16024	Drywell Purge Inlet-Outboard Isolation	C	None	Each Refueling Outage	–	Note 53 Yes. Note 40
T48-F309	2	A	18" AO Butterfly	E-10	H-16024	Torus Purge Inlet-Inboard Isolation	C	None	Each Refueling Outage	–	Note 53 Yes. Note 40
T48-F310	2	A	20" AO Butterfly	F-10	H-16024	Torus Purge Vacuum Breaker Isolation	C	Every Three Months	Each Refueling Outage	Note 27	Yes. Note 40
T48-F311	2	A	20" AO Butterfly	F-9	H-16024	Torus Purge Vacuum Breaker Isolation	C	Every Three Months	Each Refueling Outage	Note 27	Yes. Note 40
T48-F318	2	A	18" AO Butterfly	G-4	H-16024	Torus Purge Outlet-Inboard Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F319	2	A	18" AO Butterfly	D-4	H-16024	Drywell Purge Outlet-Inboard Isolation	C	None	Each Refueling Outage	–	Note 53 Yes. Note 40

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TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC XI CATA	VALVE DESCRIPTION	COORDINATES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
T48-F320	2	A	18" AO Butterfly	D-3	M-16024	Drywell Purge Outlet-Outboard Isolation	C	None	Each Refueling Outage	—	Note 53 Yes. Note 40
T48-F323A	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323B	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323C	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323D	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323E	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323F	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323G	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323H	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323I	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323J	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323K	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No
T48-F323L	2	C	18" AO Check	M-8	M-16024	Drywell to Torus Vacuum Breaker	C	Once Per Month	N/A	-	No

TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CODE CLASS	SEC. XI CAT'A	VALVE DESCRIPTION	COORD. NATES	P & I DWG. NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
T48-F324	2	A	18" AO Butterfly	D-10	H-16024	Torus Purge Inlet - Outboard Isolation	C	None	Each Refueling Outage	-	Note 53 Yes. Note 40
T48-F326	2	A	18" AO Butterfly	G-3	H-16024	Torus Purge Outlet - Outboard Isolation	O	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F328A	2	AC	20" AO Check	G-10	H-16024	Reactor Building to Suppression Chamber Vacuum Breaker	C	Every Three Months	Each Refueling Outage	-	Yes. Note 40
T48-F328B	2	AC	20" AO Check	G-9	H-16024	Reactor Building to Suppression Chamber Vacuum Breaker	C	Every Three Months	Each Refueling Outage	-	Yes. Note 40
T48-F332A	2	A	2" AO Control	E-3	H-16024	Torus Purge Outlet - Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F332B	2	A	2" AO Control	F-3	H-16024	Torus Purge Outlet - Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F333A	2	A	2" AO Control	E-4	H-16024	Torus Purge Outlet - Inboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F333B	2	A	2" AO Control	F-4	H-16024	Torus Purge Outlet - Inboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F334A	2	A	2" AO Control	B-3	H-16024	Drywell Purge Outlet - Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F334B	2	A	2" AO Control	C-3	H-16024	Drywell Purge Outlet - Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F335A	2	A	2" AO Control	B-4	H-16024	Drywell Purge Outlet - Inboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F335B	2	A	2" AO Control	C-4	H-16024	Drywell Purge Outlet - Inboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F338	2	A	2" Solenoid	H-2	H-16024	Bypass - Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40

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TABLE 4

INSERVICE INSPECTION VALVE TEST PLAN
ASME CODE CLASS 1,2, AND 3 VALVES

VALVE NUMBER	CLASS	CATEGORY	VALVE DESCRIPTION	COORDINATES	P&I DWG NO.	FUNCTION	NORMAL POSITION	TEST FREQUENCY		STROKE TIME (SEC)	SECTION XI CODE RELIEF REQUESTED
								EXERCISE (NOTE 1)	LEAKAGE		
T48-F339	2	A	2" Solenoid	H-3	H-16024	Bypass-Inboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F340	2	A	2" Solenoid	D-4	H-16024	Bypass-Outboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F341	2	A	2" Solenoid	D-4	H-16024	Bypass-Inboard Isolation	C	Every Three Months	Each Refueling Outage	5	Yes. Note 40
T48-F342A	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342B	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342C	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342D	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342E	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342F	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342G	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342H	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342I	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342J	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342K	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40
T48-F342L	2	A	1/2" Solenoid	H-8	H-16024	Torus to Drywell Vac. Brkr. Isolation	C	Note 45	Each Refueling Outage	-	Yes. Note 40

TABLE 4

NOTES

1. The exercise test is a full-stroke test at the frequency specified unless otherwise noted.

2. This isolation valve is a normally-open simple check valve with flow through it during normal operation. The only means of verifying closure is to introduce reverse flow through the valve and measure the leakage. This verification is performed each refueling during the local leak rate tests. 1

3. The test frequency for safety and relief valves is as required by IWV-3510(a).

4. The testing of the standby liquid control explosive-actuated valves will be performed to Technical Specification 4.4.A. This testing exceeds the requirements of IWV-3610.

5. This simple check valve has no safety-related function during a LOCA. It is designed to prevent a water leg from forming in the relief valve discharge line under vacuum conditions. The function is not important for mitigating the consequences of an accident. Since there is normally no flow through the valve and it is a simple check valve, there is no means to test operability.

6. E11-F019 is a normally-closed check valve in the head spray discharge line. Opening of the valve cannot be verified unless flow is introduced through the line. Flow through this line during normal power operation will not be allowed because of the thermal stresses and reactivity fluctuations that would result as a result of the injection of cold water into the vessel. Therefore, operability of this valve will be verified during the normal head spray operation that precedes cold shutdown.

7. The operability of this normally-closed check valve will be proven every three months during the Standby Liquid Control System pump operability tests. 1

8. Relay logic prevents this valve from opening during normal power operation to safeguard downstream low-pressure piping. Therefore, it will be tested during a cold shutdown (not to exceed once every three months).

9. This valve is an air-operated pressure control valve that opens and closes at set pressures. Stroke times are not applicable for this type valve since the valve is not required to open or close in a specific time. As an alternative, operability will be proven every three months during pump operability tests.

10. This containment isolation valve will be leak rate tested in a non-conservative reverse direction as addressed in the containment leak rate test program for the type C leakage tests. The correct direction is to pressurize from the inboard side of the valve; however, the piping on the inboard side runs directly from the valve to the torus and cannot be pressurized for testing.

11. deleted

12. deleted

13. deleted

14. This containment isolation valve will be leak rate tested in a non-conservative reverse direction as addressed in the containment leak rate test program for the type C leakage tests. The correct direction is to pressurize from the inboard side of the valve; however, the piping on the inboard side runs directly from the valve to the reactor (via the main steam lines) and cannot be pressurized for testing.

15. deleted

16. This turbine exhaust isolation valve is a normally-closed stop check valve with the closure mechanism in the "locked open" position. The valve then functions as a simple check valve. The only means to verify positive closure in the "locked open" position is to introduce reverse flow from the inboard side and measure leakage; however, the piping on the inboard side runs directly from the valve to the torus and cannot be pressurized for testing. As an alternative, the valve is closed with the closure mechanism and leak tested from the reverse side. The leak test, as defined in the containment leak rate test program, is conservative since the test pressure tends to lift the disc from the seat. 1

17. deleted

18. Proper HPCI pump room cooler operability is verified every three months during the HPCI pump operability test. Proper cooler operability verifies that proper flow is being obtained through the cooler and the check valve has opened.

19. The opening pressure will be determined per the requirements of ASME PTC 25.2-1966.

20. deleted

21. Only closure is required to fulfill the safety function of this check valve; however, since there is no valve between the check valve and the torus, closure cannot be verified by a leak rate test. There are no practical means to verify closure of this valve.

22. This testable check valve cannot be opened against reactor pressure using the test switch. Therefore, it will be tested during a cold shutdown (not to exceed once every three months). This test opens the valve approximately 10%. There are no means to fully stroke the valve because flow is never introduced through the valve.

23. deleted

24. Closure of this valve during normal power operation would interrupt flow to the turbine building equipment normally cooled by service water. As an alternative, it will be exercised during a cold shutdown (not to exceed once every three months).

25. Valve B31-F031A(B) is a reactor recirculation loop closure valve. Closure of this valve during normal power operation would reduce cooling water flow to the core by one-half and place the plant in an unsafe condition. Therefore, it will be tested during a cold shutdown (not to exceed once every three months). 1

26. This normally-closed Standby Liquid Control check valve cannot be opened without introducing flow through it with a pressure greater than reactor pressure. This is done at least once per operating cycle per Technical Specification 4.4.A during the pump flowrate testing.

27. Baseline stroke times shall be established during the first exercise test for this valve.

28. E11-F068A(B) is a pressure regulating control valve that modulates with changing pressure. This valve does not fully open or close during system operation. Therefore, stroke times are not applicable. Proper system parameters during pump operability tests will verify the valve is functioning correctly.

29. The opening function of this normally-closed check valve will be proven every three months during the RHR pump operability tests.

30. The opening function of this normally-closed check valve will be proven every three months during the Core Spray pump operability tests. 1

31. The opening function of this normally-closed check valve will be proven every three months during the HPCI pump operability tests.

32. Proper CRD room temperature is a positive verification that the normally-operating CRD coolers are functioning correctly. This verifies that proper flow is being obtained through this valve and that it is open.

33. The opening function of this normally-closed check valve will be proven every three months during the RCIC pump operability tests.

34. Proper RHR and Core Spray pump room cooler operability is verified every three months during the RHR and the Core Spray Pump operability tests. Proper cooler operability verifies that proper flow is being obtained through the cooler and the check valve is open.

35. Proper RCIC pump room cooler operability is verified every three months during the RCIC pump operability test. Proper cooler operability verifies that proper flow is being obtained through the cooler and the check valve is open.

36. P41-F064 is a normally-open check valve supplying cooling water to the normally-operating CRD pump room cooler and the drywell air coolers. Proper temperatures in these areas verify the valve is functioning correctly.

37. P41-F065 is a normally-open check valve supplying cooling water to the normally-operating reactor recirculation pump MG set coolers. Proper temperatures in these areas verify the valve is functioning correctly.

38. This category "A" valve communicates with the reactor coolant and provides a pressure isolation function. It will be leak tested at the containment accident pressure (59.5 psig) and the test value extrapolated per the code to a value corresponding to system functional differential pressure. When air is used as the test medium, the test value will be assumed to be water leakage, which builds further conservatism into the test. Limiting leakage values will be determined by the relief valve capacity in the low pressure piping.

39. This category "A" valve is a containment isolation valve that communicates with the reactor coolant, but provides no pressure isolation function to protect low pressure piping. Leakage through this valve is not considered to be significant in the pipe break outside containment analysis. Therefore, this valve will be leakage tested per Appendix J criteria only.

40. This category "A" valve is a containment isolation valve that communicates only with the containment atmosphere. Therefore, it will be leakage tested per Appendix J criteria only.

41. This is an air-operated, normally-closed, fail-open valve supplying cooling water to the HPCI coolers. It has neither manual open/close switches nor position-indicating lights. Actuation is accomplished by the same signal that controls the cooler. Because of the characteristics of an air-operated valve and its method of actuation, a meaningful stroke time cannot be measured. Any failure of the valve actuator will result in the valve going to the open position, which is the safety-related position. As an alternative, HPCI pump room cooler operability is verified every three months during HPCI pump operability tests. Proper cooler operability verifies that proper flow is being obtained and the valve has opened.

42. This is an air-operated, normally-closed, fail-open valve supplying cooling water to the RHR and CS coolers. It has neither manual open/close switches nor position-indicating lights. Actuation is accomplished by the same signal that controls the cooler. Because of the characteristics of an air-operated valve and its method of actuation, a meaningful stroke time cannot be measured. Any failure of the valve actuator will result in the valve going to the open position, which is the safety-related position. As an alternative, RHR and CS pump room cooler operability is verified every three months during RHR and CS operability pump operability tests. Proper cooler operability verifies that proper flow is being obtained and the valve has opened.

43. This is an air-operated, normally-closed, fail-open valve supplying cooling water to the RCIC coolers. It has neither manual open/close switches nor position-indicating lights. Actuation is accomplished by the same signal that controls the coo er. Because of the characteristics of an air-operated valve and its method of actuation, a meaningful stroke time cannot be measured. Any failure of the valve actuator will result in the valve going to the open position, which is the safety-related position. As an alternative, RCIC pump room cooler operability is verified every three months during RCIC pump operability tests. Proper cooler operability verifies that proper flow is being obtained and the valve has opened.

44. This is an air-operated, normally-closed, fail-open valve supplying cooling water to the RHR pump heat exchanger. It has neither manual open/close switches nor position indicating lights. Actuation is accomplished by the same signal that controls the pump. Because of the characteristics of an air-operated valve and its method of actuation, a meaningful stroke time cannot be measured. Any failure of the valve actuator will result in the valve going to the open position, which is the safety-related position. As an alternative, RHR pump tests are run every three months. Proper operation of the pump verifies it is receiving cooling water through the open valve.

45. This containment-isolation valve is a normally-closed ½" solenoid valve that supplies air to the Torus to Drywell Vacuum Breakers for testing purposes. The operability of this valve is proven each month when the vacuum breaker (T48-F323) is cycled. Stroke times cannot be determined for this valve since it has no indicating lights.

46. E41-F008 is a throttle valve used to test the HPCI pump. Since it does not fully close or open during operation, stroke time measurement does not apply. Operability of this valve is confirmed every three months during pump operability tests.

47. This valve is a minimum flow valve that opens and closes at set pressures. Since it is not required to open or close in a specific time, stroke time measurements do not apply. Operability of this valve is confirmed every three months during pump operability tests.

48. This is a solenoid valve that provides cooling water to the service water pump. It is interlocked with the pump start logic system and does not have indicating lights. Because of the method of actuation and the lack of indicating lights, stroke times cannot be determined. Proper operation of this valve is verified every three months during pump operability tests by proper system parameters.

49. Closure of this valve during normal power operation would interrupt flow to the reactor building equipment normally cooled by service water. As an alternative, it will be exercised during a cold shutdown (not to exceed once every three months). 1

50. Closure of this valve during normal power operation would interrupt cooling water flow to the reactor recirculation pump bearings and cause possible overheating. Therefore, it will be fully-stroked during a cold shutdown (not to exceed once every three months) and partially-stroked every 3 months.

51. Valve E41-F007 cannot be closed during normal operation because its failure in the closed position would result in the loss of the HPCI system. Valve E41-F006 cannot be opened during normal power operation without first closing E41-F007. Therefore, the operability of E41-F006 and E41-F007 will be demonstrated during a cold shutdown (not to exceed once every three months).

52. Relief is requested from partially stroking this valve during normal power operation. Because of control circuitry, this valve cannot be partially stroked. Once the valve is given the signal to open or close, it will go to the fully open or closed position. As an alternative, it will be full-stroked each cold shutdown (not to exceed once every three months).

53. Exemption is requested from the quarterly stroke requirements of Section XI because this valve is a passive containment isolation valve. It is normally closed and does not have to open to perform any safety-related function.

54. Testing during normal operation requires removing the associated RHR train from operation due to differential pressure across the valve, thereby decreasing the level of plant reliability. Relief is requested from quarterly stroke requirements; valve would then be tested during refueling outages.