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1.0 INTRODUCTION

The Code Of Federal Regulations 10CFR50.55a(g)(4) requires that licensees update their inservice inspection plan for ASME Section XI Code components every 120 months starting with commercial operation. This document details the technical requirements for the system pressure testing program plan for SSES Units 1 and 2 for the second ten year inservice inspection interval. The second inservice inspection interval for SSES Units 1 and 2 is scheduled to commence on June 1, 1994.

General inservice inspection requirements and guidelines are contained in ISI Technical Document ISI-T-106.0/206.0.

2.0 SCOPE

The System Pressure Test Program as defined in this Technical Document applies to SSES Units 1 and 2 for the second inservice inspection interval. ASME Class 1, 2, & 3 pressure retaining components subject to inspection under the rules and requirements of the ASME Section XI Code Subsections IWA, IWB, IWC, and IWD are required to be inspected except as permitted under 10CFR50.55a(g)(5). This plan is prepared in accordance with the requirements of the 1989 Edition of the ASME Section XI Code. Exceptions to this Edition of the Code are discussed in Sections 6.0, 7.0, 8.0, and 9.0 of this document and are delineated as relief requests in Appendix C.

ASME system boundaries for SSES have been established in ISI-T-102.0/202.0 and scoped, using plant P&ID drawings, to develop ISI-M drawings (reference ISI-T-101.0/201.0). These drawings are used as a basis for development of the ISI System pressure test boundaries listed in Appendix A.

3.0 REFERENCES

- 3.1 10CFR50, Code of Federal Regulations, Title 10, Part 50 as revised by Federal Register, Vol. 57, No. 152 dated August 6, 1992, pages 34673
- 3.2 U.S. NRC Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability, ASME Section XI Division 1
- 3.3 American Society of Mechanical Engineers, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components, Division 1, 1980 Edition
- 3.4 American Society of Mechanical Engineers, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components, Division 1, 1992 Edition incorporating the 1992 Addenda

- 3.5 ISI-T-101.0/201.0, Inservice Inspection Technical Document for ISI Classification Boundary Drawings
- 3.6 ISI-T-102.0/202.0, Inservice Inspection Technical Document For Basis for ISI Classification Boundaries
- 3.7 ISI-T-106.0/206.0, Inservice Inspection Technical Document For Inservice Inspection Program Plan Second Ten Year Inspection Interval

4.0 ASME CODE CASES

4.1 CODE CASES ENDORSED BY USNRC REGULATORY GUIDE 1.147

The following Code Case has been found acceptable for use for implementation in an ISI Program and has been incorporated into this plan.

N-498, Alternative Rules for 10 year Hydrostatic ressure Testing for Class 1 and 2 Systems

4.2 CODE CASES NOT ENDORSED BY USNRC REGULATORY GUIDE 1.147

In accordance with footnote 6 of 10CFR50.55a, Code Cases not endorsed by the latest revision of USNRC Reg. Guide 1.147 may be considered for use if authorized by the NRC upon request. Pursuant to 10CFR50.55a(a)(3) and 10CFR50.55a(g)(5)(iii), petition for use of the following Code Case along with justification supporting its use is provided in Relief Request RRPT-1 (Appendix C).

N-416-1, Alternative Pressure Test Requirement for Welded Repairs or Installation of Replacement Items By Welding.

5.0 DEFINITIONS

- 5.1 Component - An item in a nuclear power plant such as a vessel, pump, valve, or piping system.
- 5.2 Repair - The process of restoring a nonconforming item by welding, brazing, or metal removal such that existing design requirements are met.
- 5.3 Replacement - Items replaced as spare or renewal components, appurtenances and sub-assemblies or parts of a component or system. This also includes the addition of components such as valves and system changes such as rerouting piping.

- 5.4 System Leakage Test - Conducted following opening and reclosing of a component after pressurization to nominal operating pressure.
- 5.5 System Functional Test - Conducted to verify operability in systems (or components) not required to operate during normal plant operation while under system operating pressure.
- 5.6 System Inservice Test - Conducted to perform a VT-2 visual examination while the system is in service under operating pressure.
- 5.7 System Hydrostatic Test - Conducted during a plant shutdown at a pressure above nominal operating pressure or system pressure for which overpressure protection is provided.
- 5.8 System Pneumatic Test - Conducted in lieu of a hydrostatic pressure test for systems or components within the scope of IWC and IWD.
- 5.9 VT-2 Visual Examination - Conducted to locate evidence of leakage from pressure retaining components during performance of a system pressure test in accordance with IWA-5240.

6.0 GENERAL REQUIREMENTS

6.1 Periodic Pressure Testing

6.1.1 System Leakage, Functional, and Inservice Tests shall be scheduled and performed in accordance with the following Tables:

- a. IWA-5210-1
- b. IWB-2500-1, Cat. B-P
- c. IWC-2500-1, Cat. C-H
- d. IWD-2500-1, Cat. D-B and D-C

Appendix A contains the Code Class 1,2, & 3 systems and their associated testing procedures. Appendix B contains the schedule within the inspection interval to comply with the above requirements.

6.1.2 System pressure and temperature shall be maintained essentially constant during the course of the VT-2 examination.

6.1.3 Normal plant system or test instrumentation may be utilized to document system operating conditions for the purpose of the test.

6.2 Hydrostatic Tests

6.2.1 Class 1 and 2 systems will be tested in accordance with the requirements of Code Case N-498 except as noted in Section 8.3.

6.2.2 Normal plant system or test instrumentation may be utilized to document system operating conditions for testing in 6.2.1.

6.2.3 Class 3 systems shall be tested in accordance with IWD-5223 and IWD-5230.

6.2.4 System pressure and temperature shall be maintained essentially constant during the course of the VT-2 examination.

6.2.5 All hydrostatic pressure tests will have a 4 hour hold time for insulated systems and a 10 minute hold time for non-insulated systems except as noted in Paragraph 8.3.4.

6.2.6 The hydrostatic test boundaries have been established in accordance with IWA-5224 and documented in the associated pressure test procedures & drawings (ref. Appendix A).

6.3 Repairs and Replacements

6.3.1 Component repairs and replacements shall be pressure tested as required under IWA-5214 prior to resumption of service, unless exempted by IWA-4700 or IWA-7400.

6.3.2 Based on Relief Request RRPT-1, pressure testing shall consist of a leakage, functional, or inservice test.

6.3.3 Test conditions and performance shall be consistent with the requirements as set forth in subsections 6.1 and either 7.1, 8.1, or 9.1, as applicable.

6.4 Corrective Measures

6.4.1 All sources of leakage detected during the performance of the VT-2 examination shall be evaluated by engineering for corrective measures.

- 6.4.2 Leakage losses for buried components in excess of instrumentation tolerances shall be investigated and repaired.
- 6.4.3 Pressure boundary leakage shall be repaired or replaced in accordance with IWA-4000 or IWA-7000, respectively.
- 6.4.4 At bolted mechanical joints, a VT-3 examination shall be performed in place on the bolt(s) nearest the point of leakage, as described in Relief Request RRPT-2. Bolting demonstrating unacceptable levels of corrosion shall be replaced.
- 6.4.5 Borated systems (SBLC) shall be examined for evidence of residue, in particular at mechanical joints. Detection of residue shall be investigated for the source of leakage and the component(s) repaired if corrosion exists beyond acceptable limits.

6.5 Examinations

- 6.5.1 VT-2 visual examinations shall be conducted in accordance with IWA-5240.
- 6.5.2 All VT-2 examiners will be qualified in accordance with IWA-2300.
- 6.5.3 Documentation of all VT-2 system and component examinations shall be reviewed and accepted by the ANII and retained with the completed test procedures.

6.6 Records and Reports

- 6.6.1 All completed test procedures and associated VT-2 documentation shall be retained in accordance with IWA-6000.
- 6.6.2 At the conclusion of each refueling outage, a summary of all completed system pressure tests shall be included in the Outage Summary Report. Documentation of component VT-2 exams will be included with the applicable NIS-2 Report.



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7.0 CLASS 1 REQUIREMENTS

7.1 System Leakage Test

- 7.1.1 A system leakage test will be conducted prior to plant startup following each refuel outage.
- 7.1.2 The boundary subject to test pressurization shall extend to the valves normally closed during normal plant startup. The boundary subject to examination shall extend to the second normally closed valve.
- 7.1.3 The test shall be conducted at a test pressure not less than nominal operating pressure associated with 100% rated power.
- 7.1.4 The heatup rate and minimum pressure and temperature requirements of the Unit's Technical Specifications shall be maintained throughout the test.
- 7.1.5 There are no hold time limitations for this test once minimum test conditions have been attained.

7.2 System Hydrostatic Test

- 7.2.1 A system hydrostatic test will be conducted at or near the end of the inspection interval.
- 7.2.2 The boundary subject to test pressurization shall include all Class 1 components within the system boundary.
- 7.2.3 The test shall be conducted at a test pressure not less than nominal operating pressure associated with 100% rated power in accordance with Code Case N-498.
- 7.2.4 The heatup rate and minimum pressure and temperature requirements of the Unit's Technical Specifications shall be maintained throughout the test.
- 7.2.5 Once minimum test pressure has been attained, the hold time for this test is 4 hours for insulated portions and 10 minutes for non-insulated portions, prior to performing the VT-2 examination.

8.0 CLASS 2 REQUIREMENTS

8.1 System Functional Tests

- 8.1.1 A functional test will be performed on all Class 2 systems not required to operate during normal plant operations that are within the scope of the ISI Program Plan. Those systems are:
- a. Residual Heat Removal (RHR)
 - b. Reactor Core Isolation Cooling (RCIC)
 - c. Core Spray (CS)
 - d. High Pressure Coolant Injection (HPCI)
 - e. Standby Liquid Control (SBLC)
 - f. Control Rod Drive, Scram Discharge Volume (CRD-SDV)
 - g. Main Steam Isolation Valves, Leakage Control System (MSIV-LCS)
- 8.1.2 The test boundary shall include only those pressure retaining components pressurized during the test mode required to perform the functional test.
- 8.1.3 Nominal operating pressure and temperature for the test mode in 8.1.2 shall be acceptable as the test pressure and temperature.
- 8.1.4 After attaining nominal operating pressure, a 10 minute hold time is required prior to performing the VT-2 examination.

8.2 System Inservice Tests

- 8.2.1 An Inservice test will be performed on Class 2 systems within the ISI Plan that normally are in service during normal plant operations. Those systems are:
- a. Feedwater
 - b. Main Steam
 - c. Control Rod Drive, Hydraulic System

- 8.2.2 The test boundary shall include only those pressure retaining components pressurized during normal system service.
- 8.2.3 Nominal operating pressure and temperature shall be acceptable as the test pressure and temperature.
- 8.2.4 No hold time is required prior to performing a VT-2 examination provided the system has been in operation for at least 4 hours prior to the exam.

8.3 System Hydrostatic Tests

- 8.3.1 A system hydrostatic pressure test shall be performed in accordance with the requirements of Table IWC-2500-1, Category C-H, and Code Case N-498. The scheduled performance of these tests are contained in Appendix B and coincide with performance of the same period in the first interval that the tests were performed.
- 8.3.2 The test boundary shall extend to all Class 2 components included in those portions of systems required to operate or support the safety system function up to and including the first normally closed valve (including a safety or relief valve) or valve capable of automatic closure when the safety function is required.
- 8.3.3 Nominal operating pressure and temperature shall be acceptable as the test pressure and temperature.
- 8.3.4 The hold time limitations for this test once minimum test pressure has been attained are 4 hours for insulated portions and 10 minutes for non-insulated portions except the HPCI and RCIC Systems which have special hold time requirements per Relief Request RRPT-3.

9.0 CLASS 3 REQUIREMENTS

9.1 System Functional Tests

- 9.1.1 A functional test will be performed on all Class 3 systems not required to operate during normal plant operations that are within the scope of the ISI Program Plan. Those systems are:
 - a. Residual Heat Removal Service Water (RHRSW)

b. Emergency Service Water (ESW)

c. Fuel Pool Cooling & Clean Up

9.1.2 The test boundary shall include only those pressure retaining components pressurized during the test mode required to perform the functional test.

9.1.3 Nominal operating pressure and temperature for the test mode in 9.1.2 shall be acceptable as the test pressure and temperature.

9.1.4 After attaining nominal operating pressure, a 10 minute hold time is required prior to performing the VT-2 examination.

9.2 System Inservice Tests

There are no Class 3 systems that require inservice testing under this ISI Plan

9.3 System Hydrostatic Tests

9.3.1 A system hydrostatic pressure test shall be performed in accordance with the requirements of Table IWD-2500-1, Category D-B & D-C. The scheduled performance of these tests are contained in Appendix B and coincide with performance of the same period in the first interval that the tests were performed.

9.3.2 The system boundaries shall extend to all Class 3 components included in those portions of systems required to operate or support the safety system function up to and including the first normally closed valve (including a safety or relief valve) or valve capable of automatic closure when the safety function is required.

9.3.3 Individual test boundaries shall be comprised of portions of the system that have the same primary pressure rating as governed by the system function.

9.3.4 Hydrostatic test pressures shall be at least 1.10 times the system pressure for systems with design temperatures 200°F or less (there are no Class 3 systems within the ISI Plan with design temperatures >200°F). The system pressure shall be the lowest pressure setting among the safety or relief valves within the test boundary or the system design pressure for those portions of systems without safety or relief valves.

- 9.3.5 Pressure measuring instruments shall conform to the requirements of IWA-5260.
- 9.3.6 Test temperatures for ferritic steel components shall be within the temperature limitations as determined by the owner. These limitations shall satisfy the requirements for fracture prevention criteria.
- 9.3.7 The examination requirements for buried portions of systems or components shall consist of a test to determine the change in flow between the buried ends of the system. In the case of an annulus surrounding the buried components, the areas around each end shall be examined.
- 9.3.8 Safety or relief valve piping which discharges into the suppression pool will not be tested as required per IWD-5223(f). This requirement was deleted in the 1992 Edition, 1992 Addenda. Justification for use of this paragraph of the 1992 Edition and 1992 Addenda of the Code is contained in Relief Request RRPT-4.

SYSTEM PRESSURE TESTS AND ASSOCIATED DRAWINGS

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UNIT 1

CLASS 1

SE-100-002, Reactor Pressure Vessel Boundary System Leakage Test Drawing SE-100-002

CLASS 2

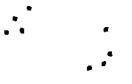
SE-145-301, Feedwater System Inservice Test Drawing SE-145-301
SE-149-301, RHR System Functional Leak Test Drawings SE-149-301-1 (Loop A)
and SE-149-301-2 (Loop B)
SE-150-301, RCIC System Functional Test Drawing SE-150-301
SE-151-301, Core Spray System Functional Test Drawings SE-151-301-1 (Loop A)
and SE-151-301-2 (Loop B)
SE-152-301, HPCI System Functional Test Drawing SE-152-301
SE-153-301, SBLC System Functional Test Drawing SE-153-301
SE-155-301, CRD System Inservice/Functional Test Drawings SE-155-301 (CRD Hydr.)
and SE-155-301-2 (CRD SDV)
SE-183-301, MSIV-LCS Open Flow Path Test Drawing SE-183-301
SE-183-311, Main Steam System Inservice Test Drawing SE-183-311

CLASS 3 FUNCTIONAL TESTS

SE-054-301, ESW System Functional Test Unit 1 and Common Drawings SE-054-301-1 (Loop A)
and SE-054-301-2 (Loop B)
SE-116-301, RHRSW System Functional Test Drawings SE-116-301-1 (Loop A)
and SE-116-301-2 (Loop B)
SE-135-301, Fuel Pool Cooling and Clean-up System Open Flow Path Test Drawing SE-135-301

CLASS 3 HYDROSTATIC TESTS

SE-054-310, A thru E Emergency Diesel Generator Hydrostatic Test Drawings SE-054-310 sh1 thru 5
SE-154-310, ESW Loop A System Hydrostatic Test Drawings SE-154-310 sh 1 & 2
SE-154-311, ESW Loop B System Hydrostatic Test Drawings SE-154-311 Sh 1 & 2
SE-016-310, RHRSW Loop A System Flow Path Test Drawings SE-016-310 sh 1 & 2
(Performed to partially satisfy system hydrostatic test requirements)
SE-016-311, RHRSW Loop B System Flow Path Test Drawings SE-016-311 sh 1 & 2
(Performed to partially satisfy system hydrostatic test requirements)
SE-116-310, RHRSW Loop A System Hydrostatic Test Drawing SE-116-310
SE-116-311, RHRSW Loop B System Hydrostatic Test Drawing SE-116-311



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SYSTEM PRESSURE TESTS AND ASSOCIATED DRAWINGS

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UNIT 2

CLASS 1

SE-200-002, Reactor Pressure Vessel Boundary System Leakage Test Drawing SE-200-002

CLASS 2

SE-245-301, Feedwater System Inservice Test Drawing SE-245-301
SE-249-301, RHR System Functional Leak Test Drawings SE-249-301-1 (Loop A) and SE-249-301-2 (Loop B)
SE-250-301, RCIC System Functional Test Drawing SE-250-301
SE-251-301, Core Spray System Functional Test Drawings SE-251-301-1 (Loop A) and SE-251-301-2 (Loop B)
SE-252-301, HPCI System Functional Test Drawing SE-252-301
SE-253-301, SBLC System Functional Test Drawing SE-253-301
SE-255-301, CRD System Inservice/Functional Test Drawings SE-255-301 (CRD Hydr.) and SE-255-301-2 (CRD SDV)
SE-283-301, MSIV-LCS Open Flow Path Test Drawing SE-283-301
SE-283-311, Main Steam System Inservice Test Drawing SE-283-311

CLASS 3 FUNCTIONAL TESTS

SE-216-301, RHRSW System Functional Test Drawing SE-216-301
SE-254-301, ESW System Functional Test Drawings SE-254-301-1 (Loop A) and SE-254-301-2 (Loop B)
SE-235-301, Fuel Pool Cooling and Clean-up System Open Flow Path Test Drawing SE-235-301

CLASS 3 HYDROSTATIC TESTS

SE-216-310, RHRSW Loop A System Hydrostatic Test Drawing SE-216-310
SE-216-311, RHRSW Loop B System Hydrostatic Test Drawing SE-216-311
SE-254-310, ESW Loop A System Hydrostatic Test Drawing SE-254-310
SE-254-311, ESW Loop B System Hydrostatic Test Drawing SE-254-311

SECOND INTERVAL PRESSURE TEST SCHEDULE

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UNIT 1

Procedure	First Period		Second Period		Third Period	
	8th Refuel	9th Refuel	10th Refuel	11th Refuel	12th Refuel	13th Refuel
<u>CLASS 1</u>						
SE-100-002	X	X	X	X	X	X#
<u>CLASS 2</u>						
SE-145-301	X		X#		X	
SE-149-301		X		X#		X
SE-150-301	X		X#		X	
SE-151-301	X		X#		X	
SE-152-301	X		X#		X	
SE-153-301	X		X		X#	
SE-155-301		X		X		X#
SE-183-301	X		X		X	
SE-183-311		X		X		X#
<u>CLASS 3</u>						
SE-116-301		X		X		X
SE-016-310						X
SE-016-311						X
SE-116-310						X
SE-116-311						X
SE-054-301	X		X		X	
SE-054-310						X
SE-154-310					X	
SE-154-311					X	
SE-135-301		X		X		X

Periodic Pressure Test performed in accordance with Code Case N-498 to satisfy the Interval Hydrostatic Test requirements.

SECOND INTERVAL PRESSURE TEST SCHEDULE

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UNIT 2

Procedure	First Period		Second Period		Third Period	
	7th Refuel	8th Refuel	9th Refuel	10th Refuel	11th Refuel	12th Refuel
<u>CLASS 1</u>						
SE-200-002	X	X	X	X	X	X#
<u>CLASS 2</u>						
SE-245-301	X		X		X#	
SE-249-301	X		X#		X	
SE-250-301	X		X#		X	
SE-251-301	X		X		X#	
SE-252-301	X		X#		X	
SE-253-301	X		X#		X	
SE-255-301		X		X		X#
SE-283-301		X		X		X
SE-283-311		X		X		X#
<u>CLASS 3</u>						
SE-216-301		X		X		X
SE-216-310				X		
SE-216-311				X		
SE-254-301		X		X		X
SE-254-310				X		
SE-254-311				X		
SE-235-301		X		X		X

Periodic Pressure Test performed in accordance with Code Case N-498 to satisfy the Interval Hydrostatic Test requirements.

RELIEF REQUESTS

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RRPT-1

I. RELIEF REQUEST APPLICABILITY

- A. Unit: 1 and 2
- B. Code Examination Category: N/A
- C. Code Item Number: N/A
- D. Code Reference: USNRC Regulatory Guide 1.147, Code Case N-416-1, Alternative Pressure Test Requirement for Welded Repairs or Installation of Replacement Items by Welding.

II. IDENTIFICATION OF COMPONENTS

ASME Section XI Class 1,2, & 3 components requiring a hydrostatic pressure test following a repair or replacement by welding.

III. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED

The ASME periodically publishes Code Cases to ASME Section XI. These Code Cases are issued primarily to clarify the intent of existing Code rules, to provide alternative rules to existing Code rules, or to provide timely rules and requirements for circumstances not covered by existing Code rules. Adoption of various pertinent Code Cases allows an ISI program the advantages of these alternative rules/clarifications prior to their later integration into subsequent Code editions and addenda.

Code Cases intended to be used during the second inservice inspection interval have been identified in this Program Plan and are subject to acceptance by the jurisdictional regulatory and enforcement authorities. In order to facilitate acceptance of published Code Cases, USNRC Regulatory Guide 1.147 periodically provides an updated listing of the ASME Section XI Code Cases that are generally acceptable to the NRC for implementation in the ISI Program. However, Code Case N-416-1 is not currently endorsed by the latest revision of USNRC Regulatory Guide 1.147 and has been included in this ISI Program Plan subject to final acceptance by regulatory and enforcement authorities. In accordance with footnote 6 of 10CFR50.55a, other Code Cases may be considered for use and may be authorized by the NRC upon request. Per 10CFR50.55a(a)(3) and 10CFR50.55a(g)(iii), this relief request serves to petition for the appropriate use of these Code Cases in this ISI Program Plan.

RELIEF REQUESTS

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RRPT-1

IV. BASIS FOR RELIEF

Code Case N-416-1 provides an alternative to hydrostatically pressure testing ASME Section XI Class 1,2, & 3 components that have been repaired or replaced by welding. The design of the weldment and its associated NDE provides the structural integrity of a repair/replacement. The intent of a pressure test is to examine the repair/replacement for leakage only. This can be accomplished through a System Leakage, Functional, or Inservice Test as applicable. This provides an acceptable level of quality and safety while significantly reducing the need to alter systems to perform a hydrostatic test and reduces worker radiological exposures.

V. ALTERNATE PROVISIONS

Per this relief request, Code Case N-416-1 has been included for use in this ISI Program Plan.

RELIEF REQUESTS

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RRPT-2

I. RELIEF REQUEST APPLICABILITY

- A. Unit: 1 and 2
- B. Code Examination Category: N/A
- C. Code Item Number: N/A
- D. Code Reference: ASME Section XI, 1989 Edition, Paragraph IWA 5250(2), Corrective Measures.

II. IDENTIFICATION OF COMPONENTS

ASME Section XI Class 1, 2, & 3 bolted connections with leakage identified during pressure testing.

III. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED

The 1989 Edition of ASME Section XI Code Paragraph IWA-5250(2) requires the licensee to remove the bolting for a VT-3 examination at connections where leakage has been identified during a pressure test.

IV. BASIS FOR RELIEF

Removal of bolting to perform a VT-3 examination requires the system to be placed in an inoperable condition without assurances that the bolting has corroded sufficiently to mandate its replacement. Leakage from bolted connections is usually localized and does not require removal of all bolting for examination.

V. ALTERNATE PROVISIONS

An 'in-place' VT-3 examination will be performed of the bolted connection with emphasis placed on the bolting subjected to the leakage. The level of corrosion will be evaluated against applicable VT-3 acceptance criteria first, then, if required, an engineering evaluation will be performed. If necessary, individual bolting will be removed for further examination. All rejected bolting will be replaced, and the bolted connection will be reinspected when the system is returned to service.

RELIEF REQUESTS

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RRPT-3

I. RELIEF REQUEST APPLICABILITY

- A. Unit: 1 and 2
- B. Code Examination Category: C-H
- C. Code Item Number: C7.20, C7.40, C7.60, C7.80
- D. Code Reference: ASME Section XI, 1989 Edition, Table IWA 5200-1.

II. IDENTIFICATION OF COMPONENTS

SSES Units 1 and 2 Class 2 pressure retaining components for the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) Systems.

III. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED

Table IWC-2500-1, Examination Category C-H, Item Numbers C7.20, C7.40, C7.60, and C7.80 requires that a system hydrostatic pressure test (IWC-5222) be conducted at or near the end of each inspection interval or during the same inspection period of each inspection interval of Inspection Program B. Relief is being requested based on the inability to properly hydrotest significant portions of the systems and the potential for misaligning/damaging the equipment in preparation of performing these tests.

IV. BASIS FOR RELIEF

During the first inspection interval, multiple relief requests were generated by the licensee due to the inability to hydrostatically pressure test portions of the RCIC and HPCI Systems (ref. 1RR-20.1, 20.2, 20.3, 20.4, 20.5, 20.6, 20.7, 20.8, and 2RR-17.1, 17.2, 17.3, 17.4, 17.5, 17.6, and 17.8). The alternate provisions consisted of performance of a system functional test for those portions incapable of being hydrostatically tested. Code Case N-498 permits use of a system functional test in lieu of a hydrostatic test providing that the system is in operation for 4 hours prior to the VT-2 examination for insulated systems, the RCIC and HPCI systems are insulated. This 4 hour hold time is not practical for the RCIC and HPCI systems due to suppression pool temperature limitations from the steam exhaust.

Also, during the first interval a significant number of problems were experienced in 'cold springing' pipe to install blanks, cutting and removing supports for access, and removal of insulation to prepare and restore from these tests. In addition, it caused alignment concerns due to the magnitude of the alterations. It also increased radiological exposure to station personnel.

RELIEF REQUESTS

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RRPT-3

The basis for relief from hydrostatic testing the RCIC and HPCI systems is that ASME has recognized that hydrostatic tests provide little increased quality or safety to the Code Systems over a functional test while increasing system out-of-service time, potentially damaging plant equipment and components while increasing radiological exposure to station personnel. The intent of extending the hold time at operating pressure to 4 hours for insulated systems under Code Case N-498 was to provide assurance that any pressure boundary leakage would migrate through the insulation during that time. The licensee proposes to perform a system functional with only a ten minute hold time based on the following considerations:

Pump Supply and Discharge

- The RCIC and HPCI pump supply and discharge is constantly maintained full via a keepfill system which would cause leakage to eventually migrate through the insulation and be capable of detection.

Steam Supply, Turbine, and Exhaust

- The RCIC and HPCI Turbine supply piping is also constantly pressurized, at reactor pressure, up to the steam admission valve at the inlet to the turbine.
- The turbines and connected piping can not be hydrostatically tested without damaging the seals and contaminating the systems lube oil system. Based on the configuration of the turbine a pneumatic test is also impractical. The turbines however are covered with a blanket style insulation which makes steam leaks easily detectable when the system is placed in operation.
- The turbine exhaust piping is open to the suppression pool during operation. In accordance with IWC-5221(d) for open ended discharge lines to the suppression pool only demonstration of an open flow path is required to be performed to satisfy the system hydrostatic test requirements. This can be verified within a ten minute hold time.

V. ALTERNATE PROVISIONS

In lieu of performing a system hydrostatic pressure test on the RCIC and HPCI Systems in accordance with Table IWC-2500-1, Category C-H, a system functional test shall be performed with a ten minute hold time prior to performance of the VT-2 examination. The system shall be in operational standby with the reactor at nominal operating pressure a minimum of 4 hours prior to the inspection.

RELIEF REQUESTS

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RRPT-4

I. RELIEF REQUEST APPLICABILITY

- A. Unit: 1 and 2
- B. Code Examination Category: D-B
- C. Code Item Number: D2.10
- D. Code Reference: ASME Section XI, 1989 Edition, IWD 5223(f).
ASME Section XI, 1992 Edition incorporating
the 1992 Addenda.

II. IDENTIFICATION OF COMPONENTS

SSES Units 1 and 2 have 16 MSRV discharge lines in each unit. These lines are subject to a pneumatic pressure test at a pressure representing 90% of the pipe submergence head of water.

III. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED

The 1989 Edition Subsubarticle IWD-5223(f) requires safety or relief valve piping which discharges into the containment to be pneumatically pressure tested to demonstrate leakage integrity in lieu of a system hydrostatic test. The lines are to be pneumatically pressure tested at a test pressure representing 90% of the pipe submergence head of water.

IV. BASIS FOR RELIEF

In accordance with 10CFR50.55a paragraphs (g)(4) and (g)(5)(i), prior to the start of the inservice inspection interval, the inservice inspection program must be revised to incorporate Code editions and addenda as referenced in 10CFR50.55a(b). Per 10CFR50.55a(g)(4)(ii), the governing Code for subsequent inservice inspection intervals is the latest edition and addenda of the Code incorporated by reference in the regulations 12 months prior to the start of the inservice inspection interval. Given a June 1, 1994 start-of-interval date, the latest referenced Code is the 1989 Edition of ASME Section XI. Relief is requested to allow the use of Paragraph IWD-5223 of the 1992 Edition incorporating the 1992 Addenda in lieu of Paragraph IWD-5223 of the 1989 Edition of the Code.

The 1992 Addenda to the 1992 Edition of the Code has deleted the requirement for pneumatically pressure testing the MSRV discharge lines at a 90% head pressure (7.8 psig for SSES). This test does little to identify leakage in these lines except gross leakage. When this system is utilized during a relief/safety valve actuation the piping momentarily experiences pressures up to reactor pressure. Any leakage would be detected by containment pressure and temperature instrumentation.

V. ALTERNATE PROVISIONS

None